Crusader ENGINES



# MARINE ILLUSTRATED PARTS MANUAL

## MODEL MP8.1L

## SN 670001 thru 67xxxx

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**Contents:**



**“TYPICAL VIEWS ARE SHOWN”**

## ENGINE ROTATION

Engine Rotation is identified as “RH” or “LH” with the engine model number. Rotation always is determined from the flywheel end looking toward the front of the engine. In some instances, propeller shaft rotation may be opposite to that of the engine.

When ordering a replacement engine, production block or parts for the engine, be certain to check engine rotation. **DO NOT rely on propeller rotation in order to determine engine rotation.**

## LEFT-HAND ROTATION is STANDARD ROTATION.

(Flywheel turns counterclockwise when viewed from flywheel end of the engine.)

## RIGHT-HAND ROTATION is OPPOSITE ROTATION.

(Flywheel turns clockwise when viewed from flywheel end of the engine.)

## HOW TO READ THIS PARTS BOOK:

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | RB001018A | AR | **Base Engine Assembly,** 8.1L Standard, bottom mount starter | 25-810-02 |
| (1) | (2) | (3) | (4) | (5) |

(1) ITEM NUMBER - This number corresponds with the number in the exploded view on the facing page.

(2) PART NUMBER - This is the designated part number for the particular component or assembly.

(3) QUANTITY - This refers to the number of pieces used.

(4) DESCRIPTION - This identifies what the component or assembly is.

(5) MODEL ID - This identifies a component or assembly that is unique to a specific engine model.

***

Symbols shown throughout parts list are defined here or on the bottom of the individual parts list page.

| | | |
|---|---|---|
| AR | = | As Required |
| OPT | = | Optional |
| NSS | = | Not Serviced Separately |
| NA | = | Not Available |
| OS | = | Oversize |
| US | = | Undersize |
| SS | = | Single Station |
| DS | = | Dual Station |
| TBD | = | To Be Determined |
| NI | = | Not Illustrated |

***

## REPLACEMENT PARTS:

***WARNING:***

Electrical, ignition and fuel system components on Crusader Engines are designed and manufactured to comply with U.S. Coast Guard rules and regulations to minimize risks of fire or explosion.

Use of replacement electrical, ignition and fuel system components which do not comply with these rules and regulations could result in a fire or explosion hazard and should be avoided.

## GASKET AND DECAL KIT NUMBERS:

| Description | Part Number |
|---|---|
| Complete Engine Overhaul Gasket Set | TBD |
| Valve Grind Gasket Set | TBD |
| Oil Pan Gasket Set | RM0263 |
| Intake Manifold Gasket Set | RM0267 |

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## MAINTENANCE ITEM PART NUMBERS:

| Description | Part Number |
|---|---|
| Oil Filter | 22679 |
| Kit, Transmission Oil Filter (ZF) | RP077011 |
| Kit, Fuel / Water Separator | RK080033 |
| Fuel Filter, screen and gasket, pre-filter | RP077014 |
| Fuel Filter, FCC | RP080026 |
| Spark Plugs | R030009 |
| Spark Plug Wire Set | RK120019 |
| Accessory Drive Belt | R066024A |
| Impeller Kit | RP061022 |
| Thermostat | R026007 |
| On-Board Spare Parts Kit | RK173087-07 |

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## CHANGE NOTICE:

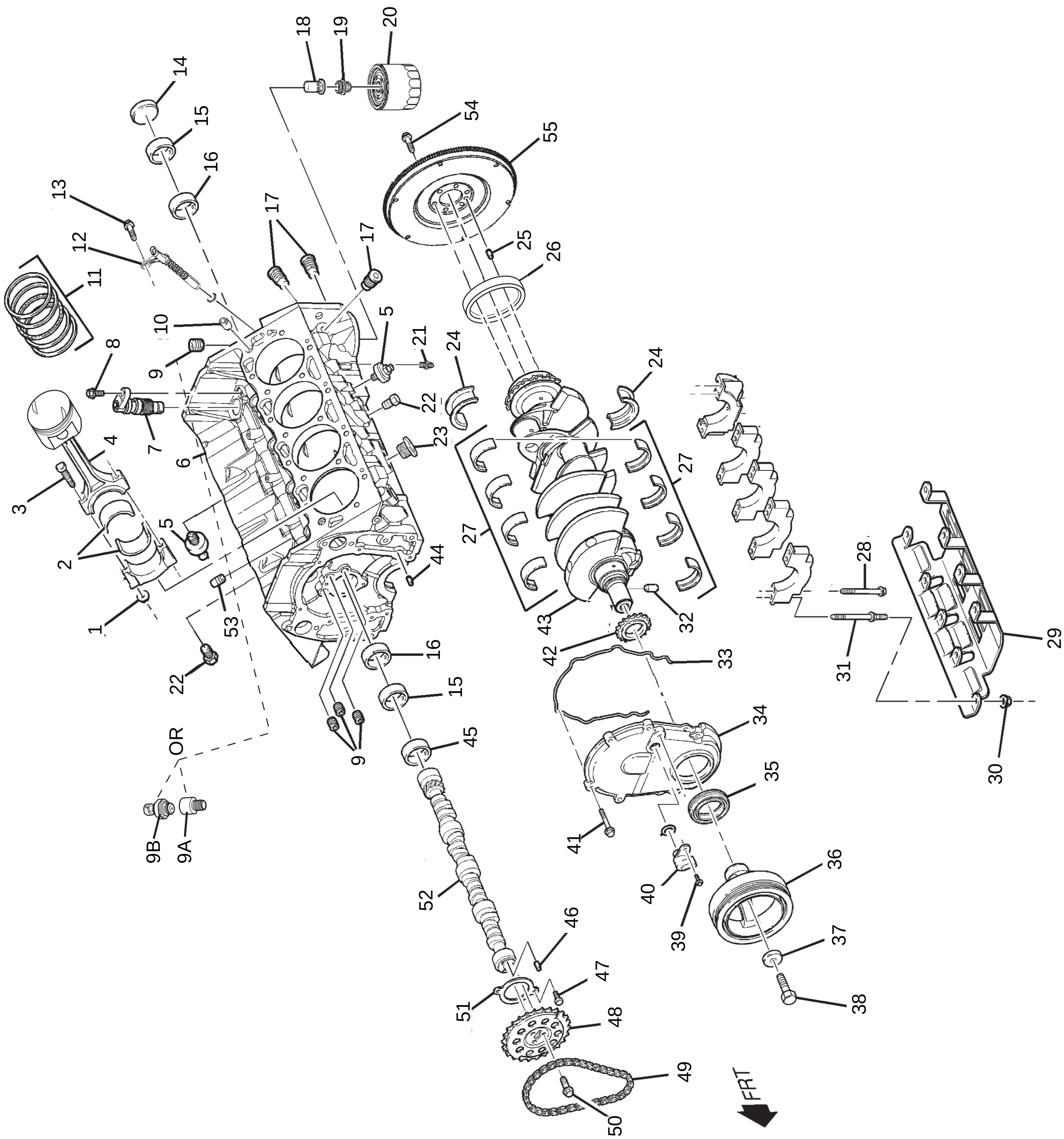
| Change Pages | Date Updated |
|---|---|
| Revised | 07/07 |
| Page 51 | 09/07 |
| Page 41 | 10/07 |

## MARINE TRANSMISSIONS:

Crusader Engines are equipped with Velvet Drive or Hurth Transmissions or “V”-drives. If transmission parts are required, contact your dealer or closest Crusader Parts Distributor for required parts.

Parts manuals and overhaul manuals are available through Crusader Distributors.

# CYLINDER BLOCK ASSEMBLY - FIGURE 1

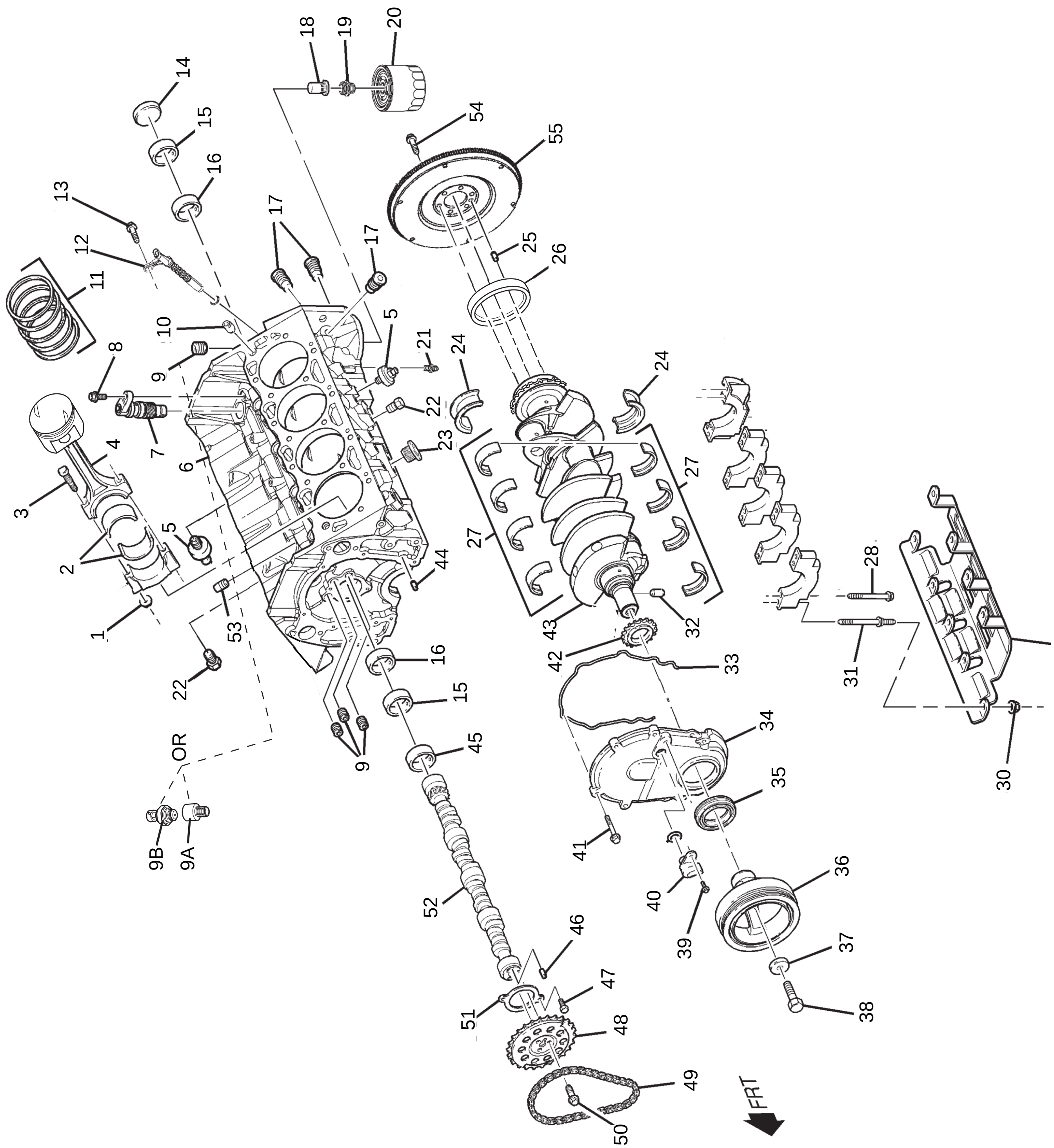



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## CYLINDER BLOCK ASSEMBLY - FIGURE 1

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| * | RB001018 | AR | **Base Engine Assembly,** 8.1L Standard, top mount starter | |
| * | RB001018A | AR | **Base Engine Assembly,** 8.1L Standard, bottom mount starter | 25-810-02 |
| * | RB001019 | AR | **Base Engine Assembly,** 8.1L H.O., top mount starter | |
| * | RB001019A | AR | **Base Engine Assembly,** 8.1L H.O., bottom mount starter | 25-811-02 |
| 1 | R017080 | 16 | **Nut**, connecting rod cap | |
| 2 | R007026 | 8 | **Bearing Set**, connecting rod (STD) | |
| 3 | R009195 | 16 | **Bolt**, connecting rod cap | |
| 4 | RA013015A | 4 | **Piston and Connecting Rod Assembly,**(LH/STD) | |
| 4 | RA013015B | 4 | **Piston and Connecting Rod Assembly,** (RH/STD) | |
| 5 | R020033 | 2 | **Sensor**, knock | |
| 6 | NSS | 1 | **Cylinder Block** | |
| 7 | RA073001 | 1 | **Drive**, oil pump | |
| 8 | TBD | 1 | **Bolt**, oil pump drive | |
| 9 | TBD | | **Plug**, oil gallery | |
| 9A | R024223 | 1 | **Adapter**, oil pressure sensor | 07-810V-01 |
| 9B | R020048 | 1 | **Sensor**, oil pressure (CAN-Bus) | 07-810V-01 |
| 10 | R022021 | 4 | **Pin**, cylinder head locating | |
| 11 | R015012 | 8 | **Ring Set**, piston (STD) | |
| 12 | R020034 | 1 | **Sensor**, crankshaft position | |
| 13 | TBD | 1 | **Bolt**, crankshaft position sensor | |
| 14 | R069065 | 1 | **Plug**, camshaft | |
| 15 | R051039B | 2 | **Bearing**, camshaft #2 and #5 | |
| 16 | R051039A | 2 | **Bearing**, camshaft #3 and #4 | |
| 17 | TBD | 4 | **Plug**, engine block oil gallery | |
| 18 | TBD | 1 | **Valve**, oil bypass | |
| 19 | R079048 | 1 | **Fitting**, oil bypass adapter | |
| 20 | R079065 | 1 | **Adapter**, oil bypass 8.1L | |
| 21 | R024183 | 2 | **Connector**, engine oil cooler hose | |
| 22 | R069070 | 2 | **Plug**, engine block coolant drain hole | |
| 23 | TBD | 1 | **Plug**, engine block coolant drain hole | |
| 24 | R007028 | 1 | **Bearing**, crankshaft (thrust) | |
| 25 | TBD | 2 | **Pin**, flywheel locating | |
| 26 | R047224 | 1 | **Seal**, crankshaft rear oil | |
| 27 | R007027 | 4 | **Bearing**, crankshaft (STD) | |
| 28 | R009196 | 10 | **Bolt**, crankshaft bearing cap | |
| 29 | R012023 | 1 | **Deflector**, crankshaft oil | |
| 30 | TBD | | **Nut**, crankshaft oil deflector | |
| 31 | R031032 | 9 | **Stud**, crankshaft bearing cap | |
| 32 | TBD | 1 | **Pin**, crankshaft balancer locating | |
| 33 | RM0264 | 1 | **Gasket**, engine front cover | |
| 34 | TBD | 1 | **Cover**, engine front cover (includes gasket and seal, | |
| 35 | R047225 | 1 | **Seal**, crankshaft front oil | |

## CYLINDER BLOCK ASSEMBLY (cont'd) - FIGURE 1

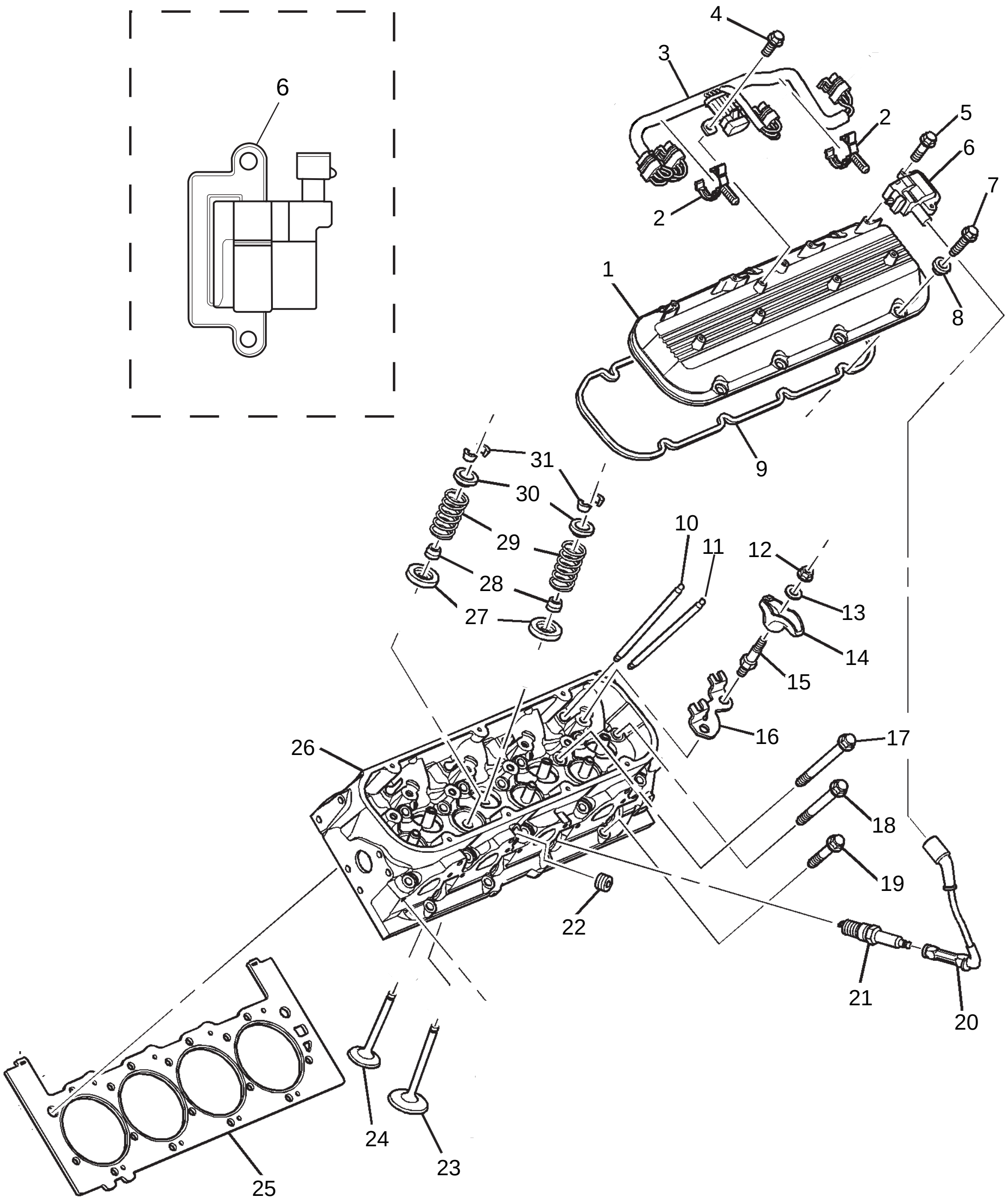


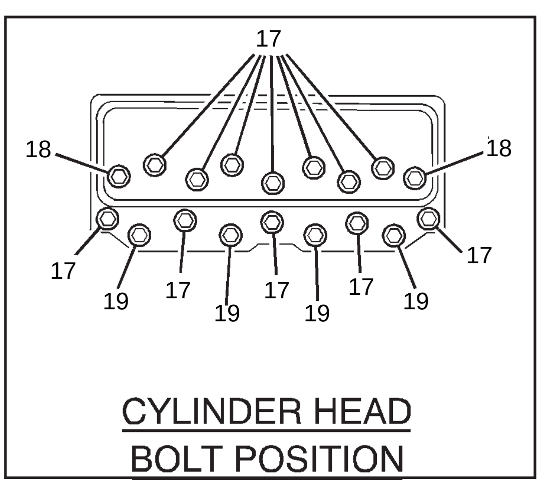

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## CYLINDER BLOCK ASSEMBLY (cont'd) - FIGURE 1

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 36 | R064015 | 1 | **Balancer**, crankshaft | |
| 37 | R096146 | 1 | **Washer**, crankshaft balancer | |
| 38 | TBD | 1 | **Bolt**, crankshaft balancer | |
| 39 | TBD | 1 | **Bolt**, camshaft position sensor | |
| 40 | R020035A | 1 | **Sensor**, camshaft position sensor | |
| 41 | TBD | 6 | **Bolt**, engine front cover | |
| 42 | TBD | 1 | **Sprocket**, crankshaft, | |
| 43 | R006029 | 1 | **Crankshaft** | |
| 44 | R022022 | 1 | **Pin**, engine front cover locating | |
| 45 | R051039A | 1 | **Bearing**, camshaft #1 | |
| 46 | R022022 | 1 | **Pin**, camshaft sprocket locating | |
| 47 | TBD | 2 | **Bolt**, camshaft retaining | |
| 48 | R054040 | 1 | **Sprocket**, camshaft | |
| 49 | R055016 | 1 | **Chain**, camshaft timing | |
| 50 | TBD | 3 | **Bolt**, camshaft sprocket | |
| 51 | R109050 | 1 | **Retainer**, camshaft | |
| 52 | RA050023 | 1 | **Camshaft**, engine (STD) | |
| 52 | RA050024 | 1 | **Camshaft**, engine (HO) | |
| 53 | TBD | 3 | **Plug**, engine block oil gallery | |
| 54 | TBD | 6 | **Bolt**, flywheel to crankshaft | |
| 55 | RA138015 | 1 | **Flywheel Assembly**, (Bottom Mount Starter) | 25-810-02, 25-811-02 |
| 55 | RA138014 | 1 | **Flywheel Assembly**, (Top Mount Starter) | |

## CYLINDER HEAD ASSEMBLY - FIGURE 2



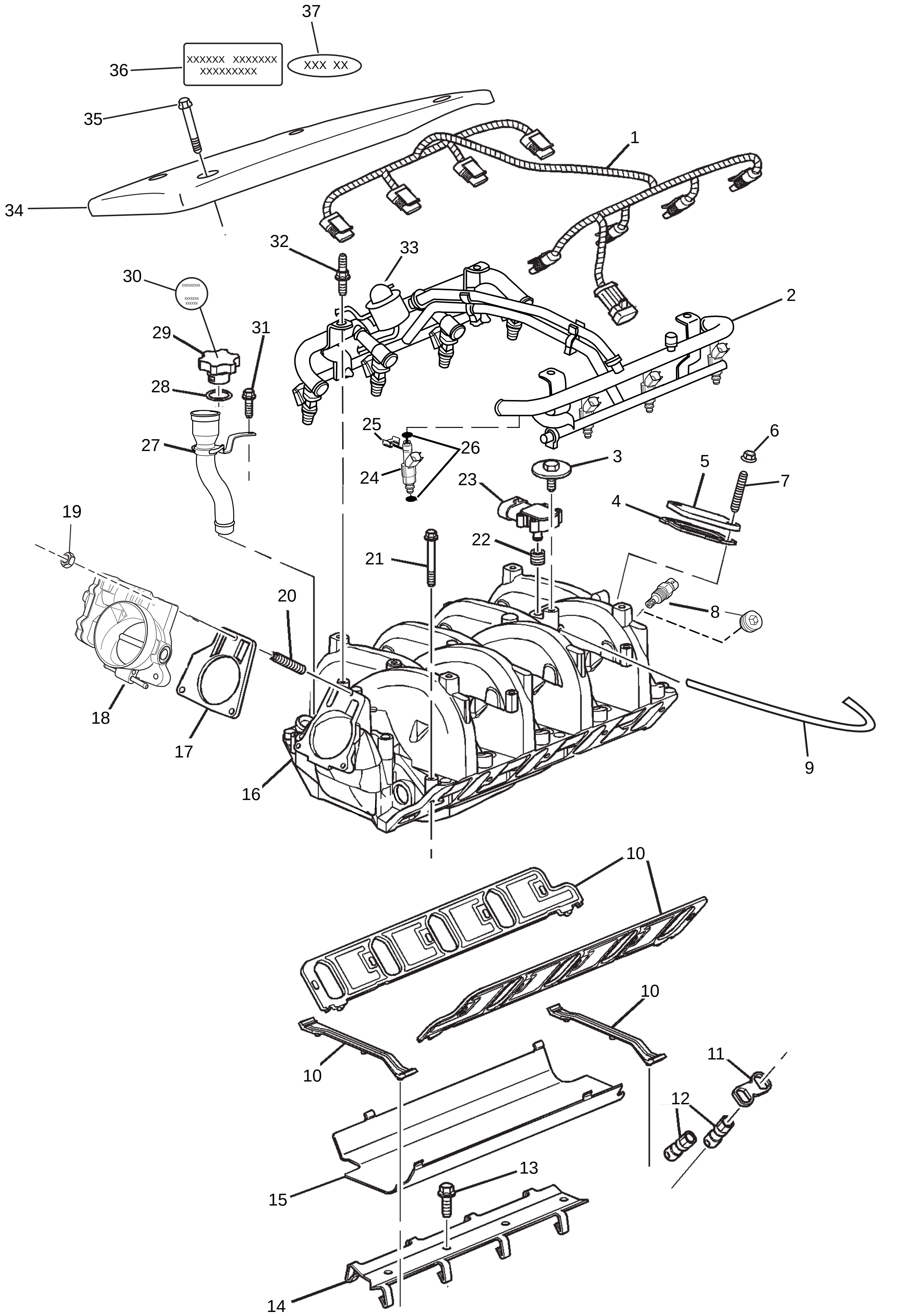




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## CYLINDER HEAD ASSEMBLY - FIGURE 2

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | TBD | 2 | **Cover**, rocker | |
| 2 | R127096 | 4 | **Retainer**, ignition coil wire harness | |
| 3 | R121074A | 2 | **Wire Harness**, ignition coils | |
| 4 | TBD | 2 | **Bolt**, ignition coil wire harness retaining | |
| 5 | TBD | 16 | **Bolt**, ignition coil retaining | |
| 6 | R117013 | 8 | **Coil**, ignition | |
| 7 | R009200 | 14 | **Bolt**, rocker cover retaining | |
| 8 | R094039 | 14 | **Grommet**, rocker cover retaining | |
| 9 | RM0261 | 2 | **Gasket**, rocker cover | |
| 10 | R039021 | 8 | **Push Rod**, intake | |
| 11 | R039022 | 8 | **Push Rod**, exhaust | |
| 12 | R017079 | 16 | **Nut**, rocker arm attaching | |
| 13 | TBD | 16 | **Ball**, rocker arm | |
| 14 | R038018 | 16 | **Rocker Arm**, valve | |
| 15 | R095039 | 16 | **Stud**, push rod guide attaching | |
| 16 | R037003 | 8 | **Guide**, pushrod | |
| 17 | R009197 | 24 | **Bolt**, cylinder head to block (long) | |
| 18 | R009198 | 4 | **Bolt**, cylinder head to block (medium) | |
| 19 | R009199 | 8 | **Bolt**, cylinder head to block (short) | |
| 20 | RK120019 | 1 | **Spark Plug Wire Set** | |
| 21 | R030009 | 8 | **Spark Plug** | |
| 22 | TBD | 2 | **Plug**, pipe (1/2”) | |
| 23 | R043033 | 8 | **Valve**, intake (STD) | |
| 24 | R043034 | 8 | **Valve**, exhaust (STD) | |
| 25 | RM0262B | 1 | **Gasket**, cylinder head (RH) | |
| 25 | RM0262A | 1 | **Gasket**, cylinder head (LH) | |
| 26 | TBD | 1 | **Cylinder Head Assembly (RH)** | |
| 26 | TBD | 1 | **Cylinder Head Assembly (LH)** | |
| 27 | R049013 | 16 | **Rotator**, valve | |
| 28 | R047226 | 16 | **Seal**, valve stem | |
| 29 | R046049 | 16 | **Valve Spring Assembly** | |
| 30 | R049014 | 16 | **Cap**, valve spring | |
| 31 | R049010 | 32 | **Retainer**, valve stem | |

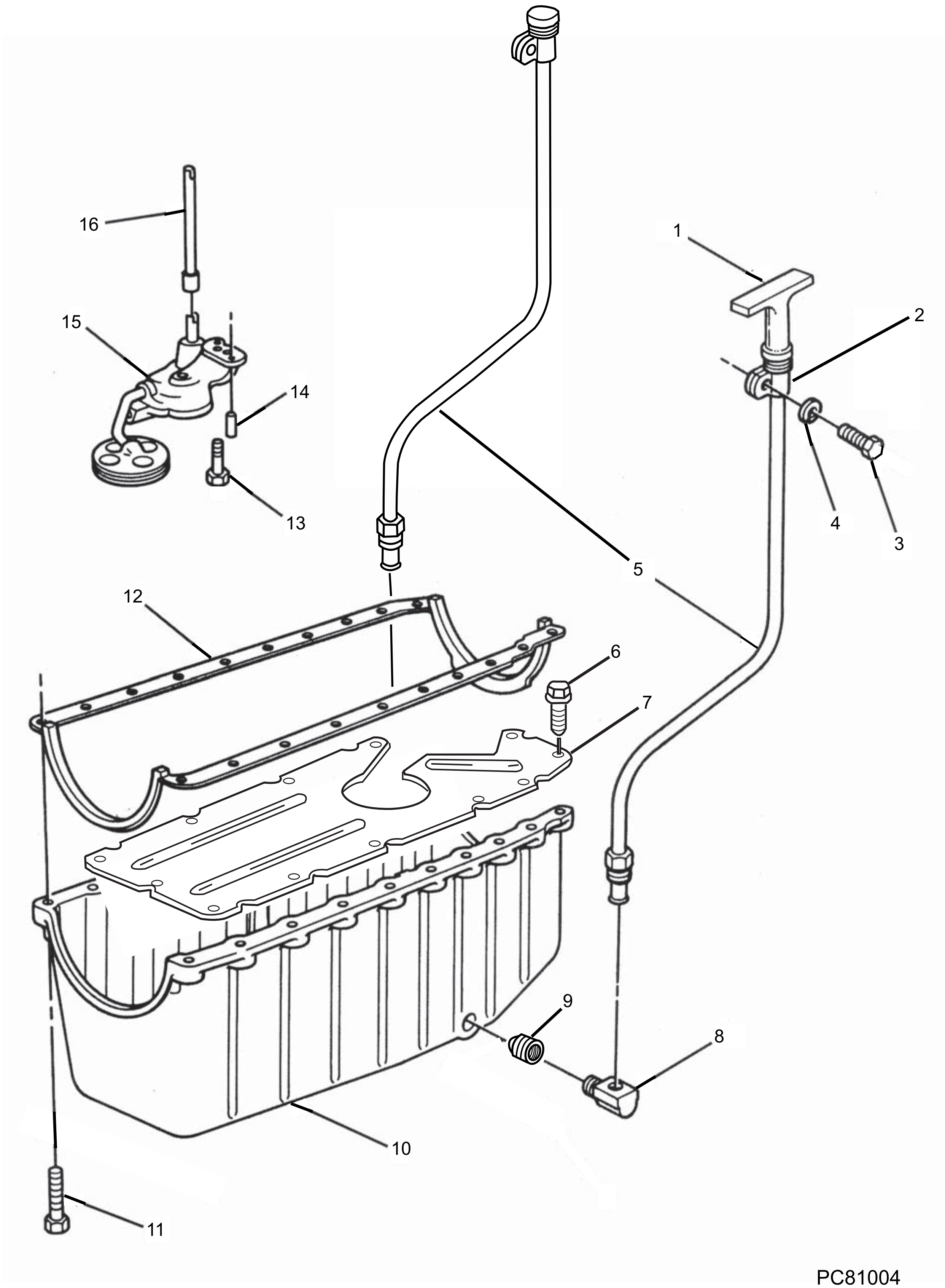
## INTAKE MANIFOLD ASSEMBLY - FIGURE 3



# INTAKE MANIFOLD ASSEMBLY - FIGURE 3

| ITEM | PART NO. | QTY. | DESCRIPTION | MDOEL ID |
|---|---|---|---|---|
| 1 | R121075 | 1 | **Wire Harness**, fuel injectors | |
| 2 | RA086001A | 1 | **Fuel Rail Assembly,** without fuel return line | |
| 3 | TBD | 1 | **Bolt**, MAP sensor retaining | |
| 4 | RM0265 | 1 | **Gasket**, EGR blockoff cover | |
| 5 | TBD | 1 | **Cover**, EGR blockoff | |
| 6 | TBD | 2 | **Nut**, EGR blockoff cover attaching | |
| 7 | TBD | 2 | **Stud**, EGR blockoff cover attaching | |
| 8 | R020032 | 1 | **Air Temp Sensor** | |
| 8 | TBD | 1 | **Plug**, intake manifold core hole | 07-811V-01 |
| 9 | 20237 | 1 | **Hose**, fuel pressure regulator vacuum | |
| 10 | RM0267 | 1 | **Gasket Set**, intake manifold | |
| 11 | R037004 | 8 | **Guide**, valve lifter | |
| 12 | R040004 | 16 | **Lifter**, valve | |
| 13 | TBD | 4 | **Bolt**, valve lifter retainer | |
| 14 | R090253 | 1 | **Retainer**, valve lifter | |
| 15 | R012025 | 1 | **Guard**, oil splash - lifter | |
| 16 | TBD | 1 | **Intake Manifold** | |
| 17 | RM0251 | 1 | **Gasket**, throttle body mounting | |
| 18 | RA035041 | 1 | **Throttle Body**, electronic throttle | |
| 19 | 49027 | 3 | **Nut**, throttle body attaching | |
| 20 | TBD | 3 | **Stud**, throttle body mounting | |
| 21 | TBD | 10 | **Bolt**, intake manifold to cylinder head | |
| 22 | TBD | 1 | **Seal**, MAP sensor | |
| 23 | R020036 | 1 | **MAP Sensor** | |
| 24 | RA087006 | 8 | **Fuel Injector Assembly** | |
| 25 | R127097 | 8 | **Retainer**, fuel injector to fuel rail | |
| 26 | RK047227 | 8 | **O-Ring**, kit fuel injector | |
| 27 | R034046B | 1 | **Riser**, oil fill | |
| 28 | NSS | 1 | **O-Ring**, oil fill riser cap | |
| 29 | R034038B | 1 | **Cap**, oil fill riser | |
| 30 | R143137 | 1 | **Decal**, oil fill riser cap | |
| 31 | TBD | 1 | **Bolt**, oil fill riser attaching | |
| 32 | TBD | 3 | **Stud**, fuel rail assembly attaching | |
| 33 | NSS | 1 | **Dampener**, fuel rail | |
| 34 | R060057 | 1 | **Cover**, engine | |
| 35 | 99225030 | 4 | **Bolt**, engine cover attaching | |
| 36 | R143130 | AR | **Decal**, “CAPTAIN’S CHOICE” | |
| 36 | R143130A | AR | **Decal**, “CRUSADER ENGINES” | |
| 37 | R143133 | AR | **Decal**, “8.1 MPI” (red/silver) | |
| 37 | R143133A | AR | **Decal**, “8.1 MPI” (black/silver) | |
| 37 | R143134 | AR | **Decal**, “8.1 HO” (red/silver) | |

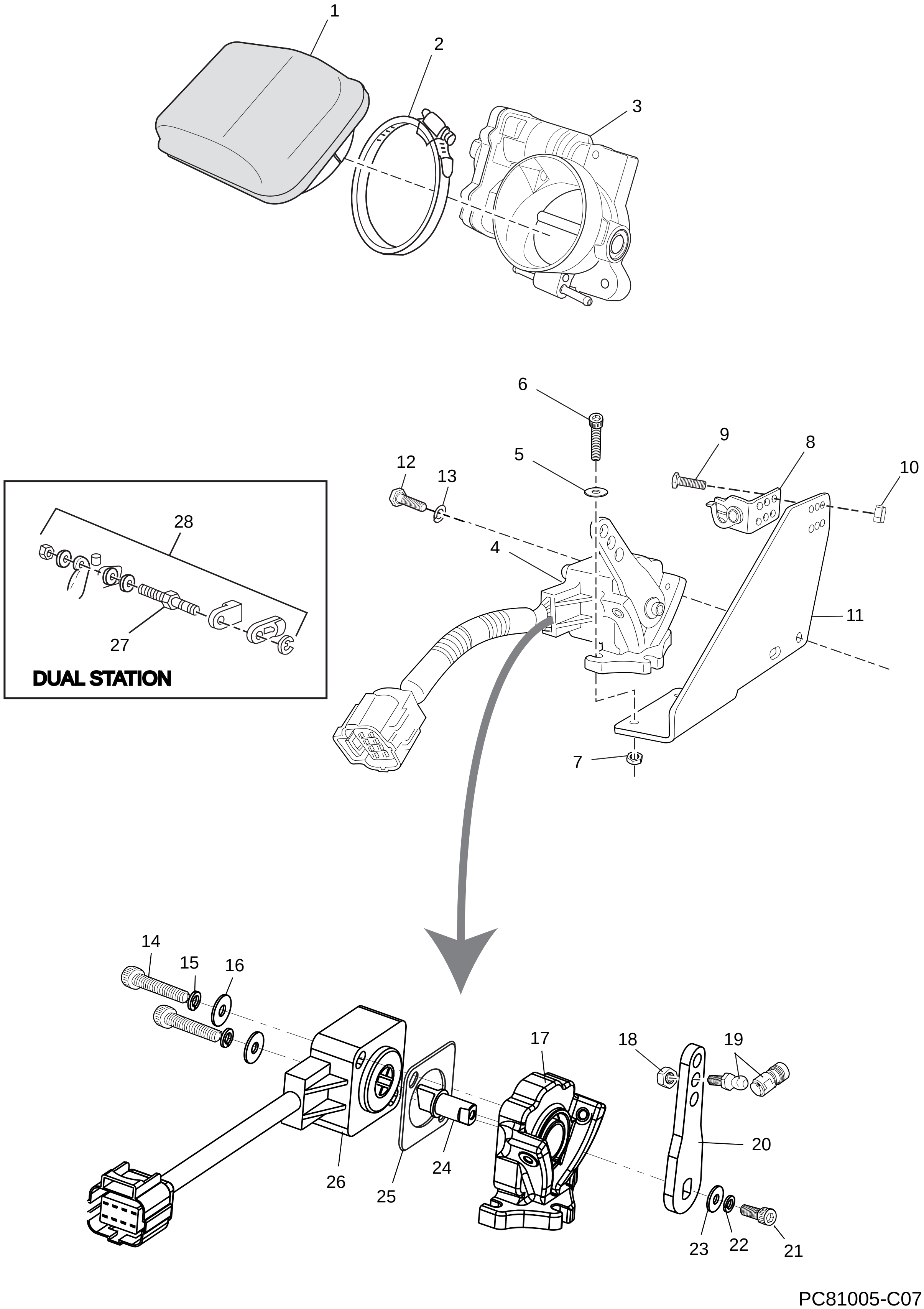
## OIL PAN and OIL PUMP ASSEMBLY - FIGURE 4



## OIL PAN and OIL PUMP ASSEMBLY - FIGURE 4

| ITEM | PART NO. | QTY | DESCRIPTION | QUANTITY |
|---|---|---|---|---|
| 1 | R041068 | 1 | **Dipstick**, oil level (Level) | |
| 1 | R041069 | 1 | **Dipstick**, oil level (Angled) | |
| 2 | R127015 | 2 | **Clamp**, dipstick tube attaching | |
| 3 | 98443025 | 2 | **Bolt**, dipstick tube attaching | |
| 4 | 93940000 | 2 | **Lockwasher**, dipstick tube attaching bolt | |
| 5 | R041072 | 2 | **Dipstick Tube** | |
| 6 | TBD | 12 | **Bolt**, oil pan baffle | |
| 7 | R012026 | 1 | **Baffle**, oil pan | |
| 8 | R024017 | 2 | **Elbow**, dipstick tube to oil pan | |
| 9 | R024200 | 2 | **Adapter**, dipstick elbow to oil pan | |
| 10 | R005023 | 1 | **Oil Pan** | |
| 11 | TBD | 20 | **Bolt**, oil pan mounting | |
| 12 | RM0263 | 1 | **Gasket**, oil pan | |
| 13 | TBD | 2 | **Bolt**, oil pump mounting | |
| 14 | R022022 | 1 | **Pin**, dowel - oil pump aligning | |
| 15 | RA070017 | 1 | **Oil Pump Assembly** | |
| 16 | R058055 | 1 | **Shaft**, oil pump to oil drive | |
| NI | TBD | 1 | **Kit**, oil drain | |

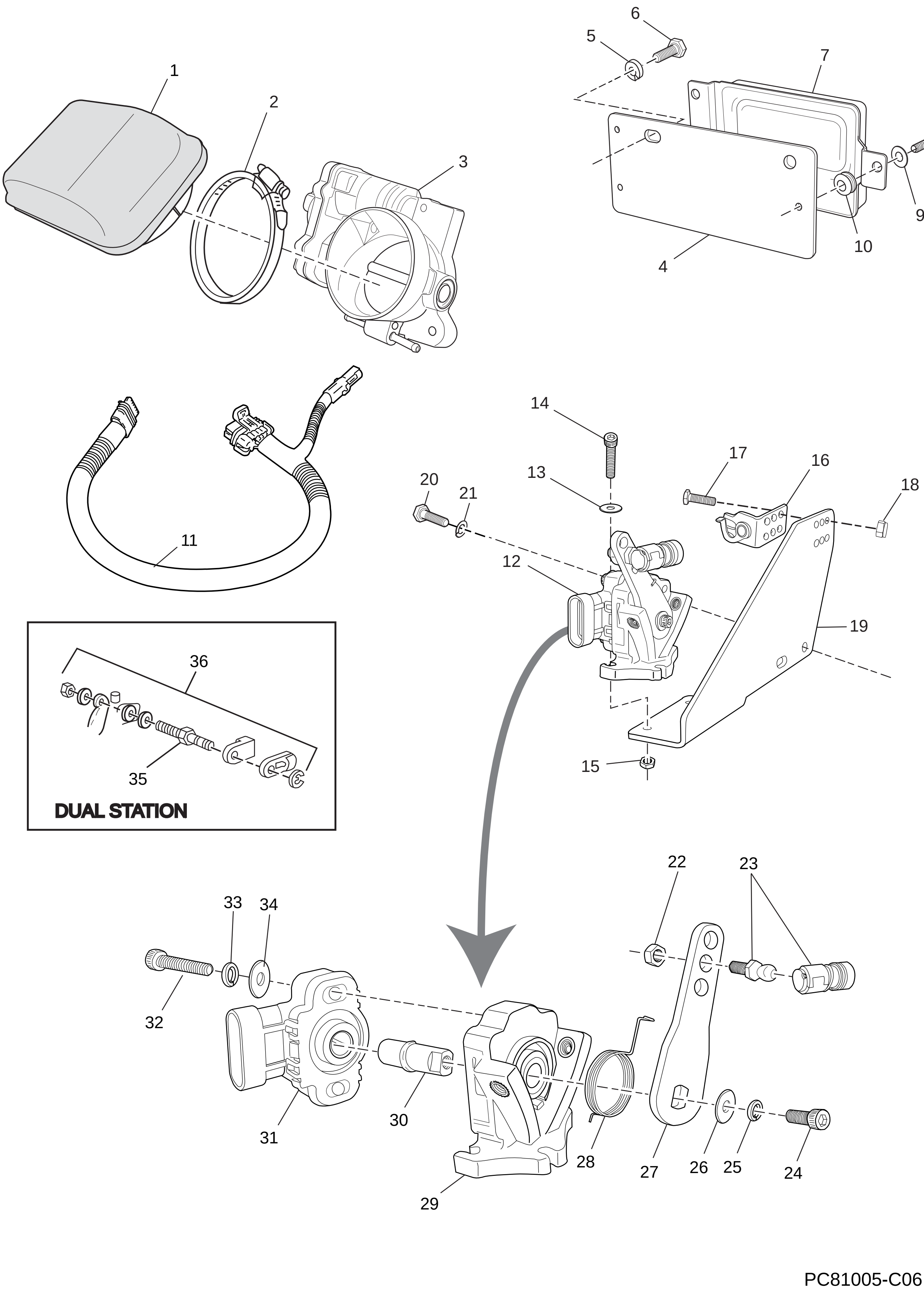
## THROTTLE BODY and RELATED COMPONENTS - FIGURE 5



## THROTTLE BODY and RELATED COMPONENTS - FIGURE 5

| ITEM | PART NO. | QTY | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | R145021A | 1 | **Flame Arrestor** | |
| 2 | RS3857 | 1 | **Clamp**, retaining | |
| 3 | RA035041 | 1 | **Throttle Body Assembly** | |
| 4 | RA119005 | 1 | **Throttle Control Position (TCP) Sensor Assembly** | |
| 5 | 92004000 | 3 | **Flatwasher**, TCP assembly attaching | |
| 6 | 91864075 | 3 | **Bolt**, TCP assembly attaching | |
| 7 | RS2052 | 3 | **Locking Nut**, TCP assembly attaching | |
| 8 | R090086 | 1 | **Cable Clip,** throttle attaching (single station) | |
| 9 | RS2055 | 2 | **Locking Nut**, cable clip attaching bolt | |
| 10 | RS5122 | 2 | **Bolt**, cable clip attaching | |
| 11 | R090323 | 1 | **Bracket**, TCP Assembly mounting | |
| 12 | RS0251 | 2 | **Bolt**, TCP Assembly mounting bracket attaching | |
| 13 | RS2178 | 2 | **Lockwasher**, TCP Assembly mounting bracket attaching | |
| 14 | 91064125 | 2 | **Bolt**, TCP Sensor attaching | |
| 15 | 93040000 | 2 | **Lock Washer**, TCP Sensor attaching | |
| 16 | 92004000 | 2 | **Flat Washer**, TCP Sensor attaching | |
| 17 | R109053A | 1 | **Plate Assembly**, TCP Sensor | |
| 18 | RS1568 | 1 | **Nut**, ball joint attaching | |
| 19 | R178003 | 1 | **Ball Joint Assembly** | |
| 20 | R081009 | 1 | **Arm**, TCP Sensor | |
| 21 | 91864050 | 1 | **Bolt**, TCP Sensor arm attaching | |
| 22 | 94854500 | 1 | **Lock Washer**, TCP Sensor arm attaching | |
| 23 | 94004200 | 1 | **Flat Washer**, TCP Sensor arm attaching | |
| 24 | R058071 | 1 | **Shaft**, TCP Sensor | |
| 25 | R062090 | 1 | **Spacer**, TCP support | |
| 26 | R119005 | 1 | **TCP Sensor** | |
| 27 | 22978 | AR | **Pivot Pin**, cable attaching (dual station) | |
| 28 | 23235 | AR | **Cable Attaching Kit**, (dual station) | |

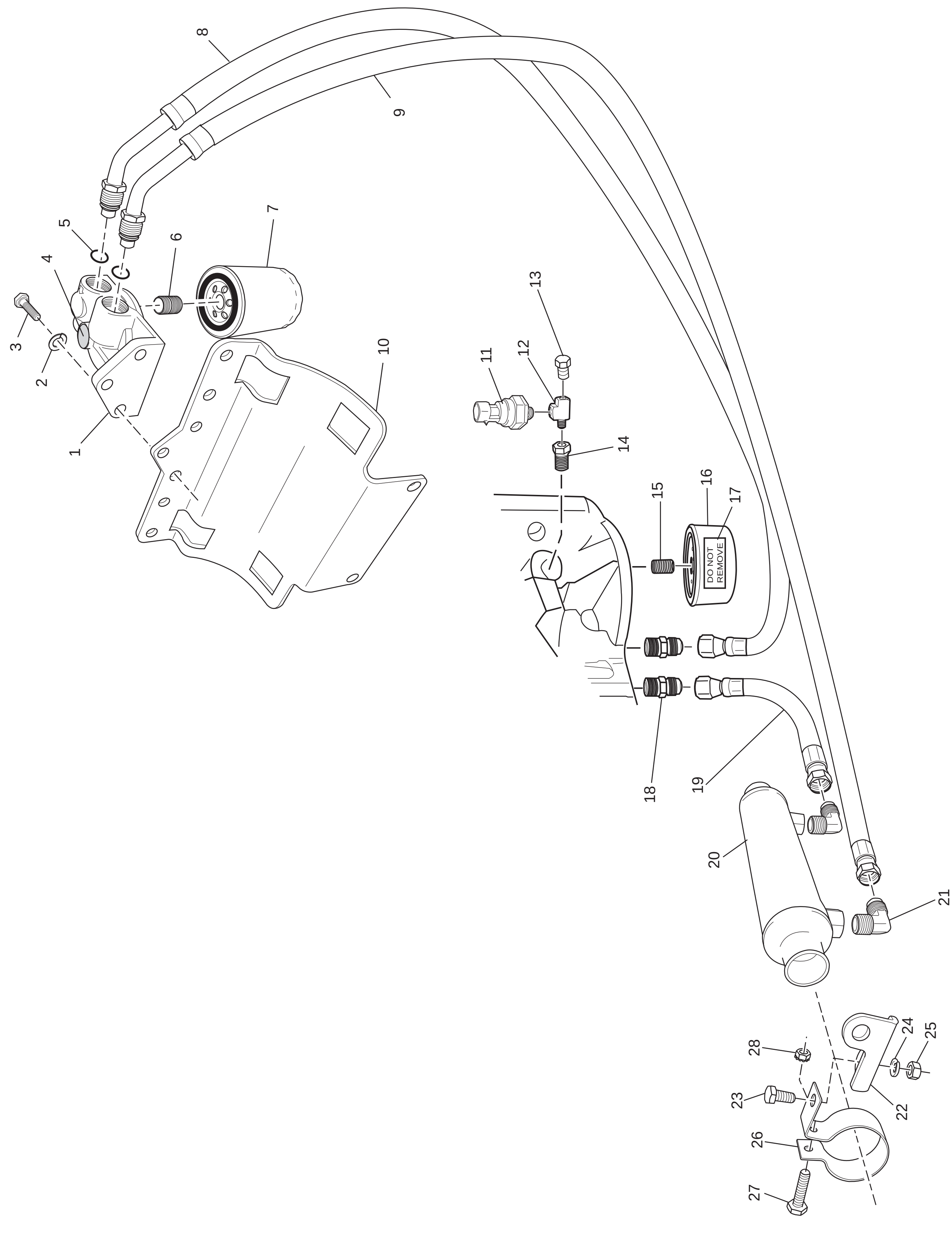
## MODEL 07-811V-01 THROTTLE BODY and RELATED COMPONENTS - FIGURE 6



## MODEL 07-811V-01 THROTTLE BODY and RELATED COMPONENTS - FIGURE 6

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | R145021A | 1 | **Flame Arrestor Assembly** | |
| 2 | RS3857 | 1 | **Clamp,** flame arrestor | |
| 3 | RA035041 | 1 | **Throttle Body Assembly**, electronic | |
| 4 | R090321A | 1 | **Bracket**, TAC Module mounting | 07-811V-01 |
| 5 | RS2179 | 2 | **Lockwasher**, TAC Module mounting bracket attaching | 07-811V-01 |
| 6 | 98333020 | 2 | **Bolt**, TAC Module mounting bracket attaching | 07-811V-01 |
| 7 | R116020 | 1 | **Throttle Actuator Control (TAC) Module** | 07-811V-01 |
| 8 | 91087050 | 3 | **Screw**, self-tapping, TAC Module attaching | 07-811V-01 |
| 9 | R096142 | 3 | **Flatwasher**, TAC Module attaching | 07-811V-01 |
| 10 | R094042 | 3 | **Grommet**, TAC Module attaching | 07-811V-01 |
| 11 | R121086A | 1 | **Harness**, TCP Sensor to TAC Module | 07-811V-01 |
| 12 | RA119004 | 1 | **Throttle Control Position (TCP) Sensor Assembly** | 07-811V-01 |
| 13 | 92004000 | 3 | **Flatwasher**, TCP assembly attaching | |
| 14 | 91864075 | 3 | **Bolt**, TCP assembly attaching | |
| 15 | RS2052 | 3 | **Locking Nut**, TCP assembly attaching | |
| 16 | R090086 | 1 | **Cable Clip,** throttle attaching (single station) | |
| 17 | RS2055 | 2 | **Locking Nut**, cable clip attaching bolt | |
| 18 | RS5122 | 2 | **Bolt**, cable clip attaching | |
| 19 | R090323 | 1 | **Bracket**, TCP Assembly mounting | |
| 20 | RS0251 | 2 | **Bolt**, TCP Assembly mounting bracket attaching | |
| 21 | RS2178 | 2 | **Lockwasher**, TCP Assembly mounting bracket attaching | |
| 22 | RS1568 | 1 | **Nut**, ball joint attaching | |
| 23 | R178003 | 1 | **Ball Joint Assembly** | |
| 24 | 91874050 | 1 | **Bolt**, TCP Sensor arm attaching | 07-811V-01 |
| 25 | 94854500 | 1 | **Lock Washer**, TCP Sensor arm attaching | 07-811V-01 |
| 26 | 94804000 | 1 | **Flat Washer**, TCP Sensor arm attaching | 07-811V-01 |
| 27 | R081009 | 1 | **Arm**, TCP Sensor | 07-811V-01 |
| 28 | R046051 | 1 | **Spring**, TCP Sensor | 07-811V-01 |
| 29 | R109053 | 1 | **Plate Assembly**, TCP Sensor | 07-811V-01 |
| 30 | R058070 | 1 | **Shaft**, TCP Sensor | 07-811V-01 |
| 31 | R119004 | 1 | **TCP Sensor** | 07-811V-01 |
| 32 | 91064100 | 2 | **Bolt**, TCP Sensor attaching | 07-811V-01 |
| 33 | 93040000 | 2 | **Lock Washer**, TCP Sensor attaching | 07-811V-01 |
| 34 | 92004000 | 2 | **Flat Washer**, TCP Sensor attaching | 07-811V-01 |
| 35 | 22978 | AR | **Pivot Pin**, cable attaching (dual station) | |
| 36 | 23235 | AR | **Cable Attaching Kit**, (dual station) | |

## REMOTE OIL FILTER COMPONENTS - FIGURE 7

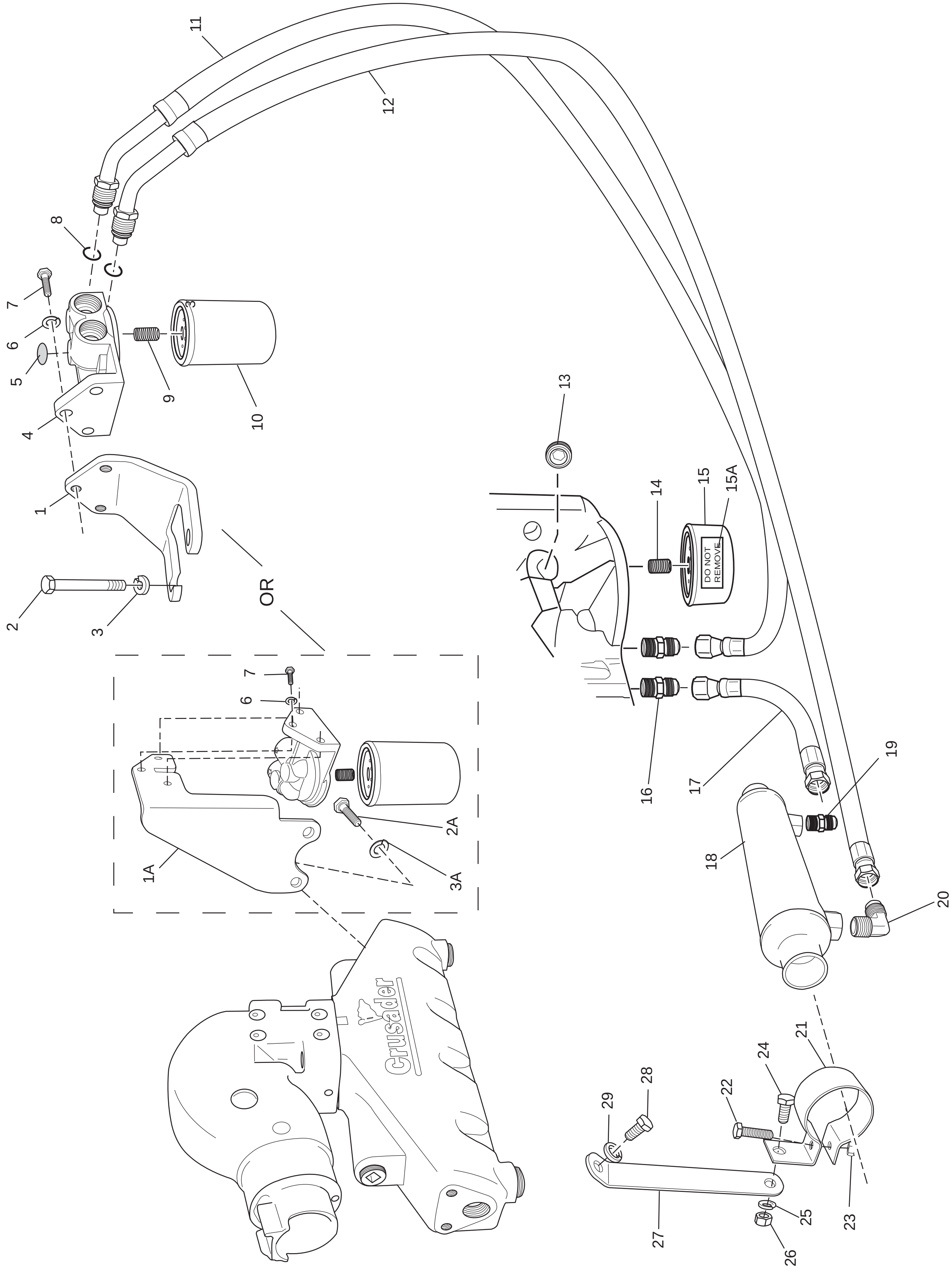



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## REMOTE OIL FILTER COMPONENTS - FIGURE 7

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | R079066 | 1 | **Oil Filter Header** | |
| 2 | 93930000 | 3 | **Lockwasher**, header mounting to brkt | |
| 3 | 98333020 | 3 | **Bolt**, header mounting to brkt | |
| 4 | R143175 | 1 | **Decal**, “Caution Hot” | |
| 5 | R047245 | 2 | **O-Ring,** oil line | |
| 6 | R024203 | 1 | **Nipple**, header filter adapter | |
| 7 | 22679 | 1 | **Filter**, oil | |
| 8 | RA045155A | 1 | **Hose Assembly**, engine block to filter header | |
| 9 | RA045155A | 1 | **Hose Assembly**, filter header to cooler | |
| 10 | R090258 | 1 | **Bracket,** heat exchanger - ROF header mounting | |
| 11 | R020049 | 1 | **Sender**, oil pressure | |
| 12 | R024145 | 1 | **Tee**, sender attaching | |
| 13 | RS3554 | 1 | **Plug**, oil pressure sensor tee | |
| 14 | RS3677 | 1 | **Adapter**, sender attaching tee | |
| 15 | R079048 | 1 | **Fitting**, oil bypass adapter | |
| 16 | R079065 | 1 | **Adapter**, oil bypass | |
| 17 | R143135 | 1 | **Decal**, oil bypass adapter | |
| 18 | R024183 | 2 | **Fitting**, 5/8 SAE X 1/2 NPT, Straight | |
| 19 | RA045121A | 1 | **Hose Assembly**, cooler to engine block | |
| 20 | R147049 | 1 | **Cooler**, oil | |
| 21 | R024184 | 2 | **Fitting**, 5/8 SAE X 1/2 NPT, 90 degree | |
| 22 | R090013A | 1 | **Bracket**, oil cooler attaching | |
| 23 | RS0302 | 1 | **Bolt,** oil cooler attaching | |
| 24 | RS2180 | 1 | **Lockwasher**, oil cooler attaching | |
| 25 | RS2058 | 1 | **Nut,** oil cooler attaching | |
| 26 | R090010 | 1 | **Clamp**, oil cooler mounting | |
| 28 | RS0256 | 1 | **Bolt**, oil cooler clamp | |
| 29 | RS1028 | 1 | **Nut,** oil cooler clamp | |

MODEL ID - 07-811V-01 REMOTE OIL FILTER COMPONENTS - FIGURE 8

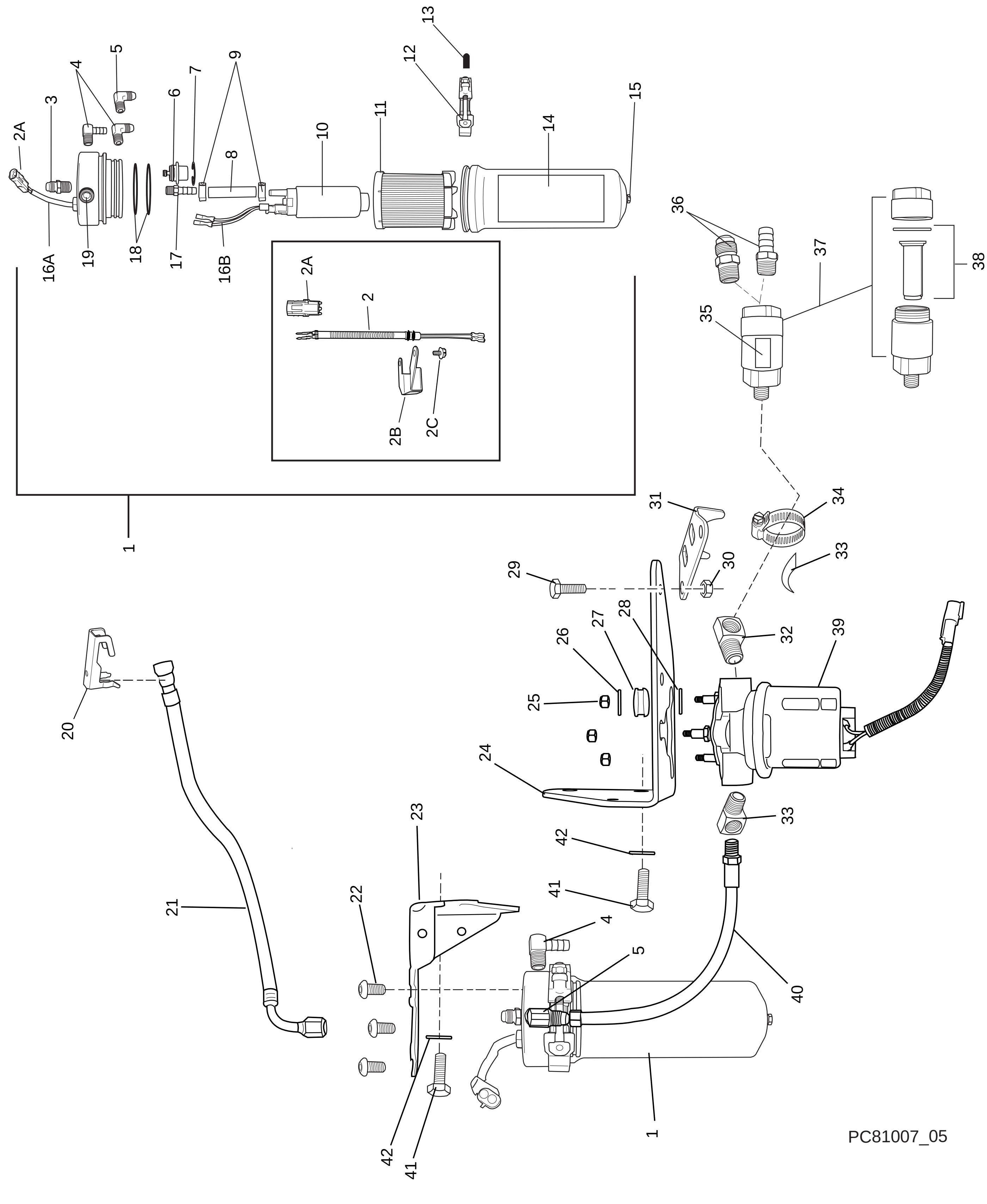



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## MODEL ID - 07-811V-01 REMOTE OIL FILTER COMPONENTS - FIGURE 8

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | R090226 | 1 | **Bracket,** ROF header mounting | 07-811V-01 |
| 1A | R090324 | 1 | **Bracket,** ROF header mounting | 07-811V-01 |
| 2 | 90305525 | 2 | **Bolt**, ROF bracket attaching | 07-811V-01 |
| 2A | RS0302 | 2 | **Bolt**, ROF bracket attaching | 07-811V-01 |
| 3 | RS2674 | 3 | **Flat Washer**, ROF bracket attaching | 07-811V-01 |
| 3A | RS2180 | 3 | **Lock Washer**, ROF bracket attaching | 07-811V-01 |
| 4 | R079066 | 1 | **Oil Filter Header** | 07-811V-01 |
| 5 | R143175 | 1 | **Decal**, “Caution Hot” | 07-811V-01 |
| 6 | 93930000 | 3 | **Lockwasher**, header mounting to brkt | 07-811V-01 |
| 7 | 98333020 | 3 | **Bolt**, header mounting to brkt | 07-811V-01 |
| 8 | R047245 | 2 | **O-Ring,** oil line | 07-811V-01 |
| 9 | R024203 | 1 | **Nipple**, header filter adapter | 07-811V-01 |
| 10 | 22679 | 1 | **Filter**, oil | 07-811V-01 |
| 11 | RA045120B | 1 | **Hose Assembly**, engine block to filter header (w/R090226) | 07-811V-01 |
| 11 | RA045120D | 1 | **Hose Assembly**, engine block to filter header (w/R090324) | 07-811V-01 |
| 12 | RA045120B | 1 | **Hose Assembly**, filter header to cooler (w/R090226) | 07-811V-01 |
| 12 | RA045120D | 1 | **Hose Assembly**, filter header to cooler (w/R090324) | 07-811V-01 |
| 13 | TBD | 1 | **Plug,** oil galley | 07-811V-01 |
| 14 | R079048 | 1 | **Fitting**, oil bypass adapter | 07-811V-01 |
| 15 | R079065 | 1 | **Adapter**, oil bypass | 07-811V-01 |
| 15A | R143135 | 1 | **Decal**, oil bypass adapter | 07-811V-01 |
| 16 | R024183 | 2 | **Fitting**, remote oil filter hose | 07-811V-01 |
| 17 | RA045121A | 1 | **Hose Assembly**, cooler to engine block | 07-811V-01 |
| 18 | R147049 | 1 | **Cooler**, oil | 07-811V-01 |
| 19 | R024183 | 1 | **Fitting**, 5/8 SAE X 1/2 NPT, straight | 07-811V-01 |
| 20 | R024184 | 1 | **Fitting**, 5/8 SAE X 1/2 NPT, 90 degree | 07-811V-01 |
| 21 | R090010 | 1 | **Clamp**, oil cooler | 07-811V-01 |
| 22 | RS0256 | 1 | **Bolt**, oil cooler clamp | 07-811V-01 |
| 23 | RS2058 | 1 | **Nut,** oil cooler clamp | 07-811V-01 |
| 24 | 90318275 | 1 | **Bolt,** oil cooler clamp to bracket attaching | 07-811V-01 |
| 25 | 9330000 | 1 | **Lockwasher**, oil cooler clamp to bracket attaching | 07-811V-01 |
| 26 | 95310300 | 1 | **Nut,** oil cooler clamp to bracket attaching | 07-811V-01 |
| 27 | R090233A | 1 | **Bracket**, oil cooler attaching | 07-811V-01 |
| 28 | 98443025 | 1 | **Bolt,** bracket attaching | 07-811V-01 |
| 29 | 93940000 | 1 | **Lockwasher**, bracket attaching | 07-811V-01 |

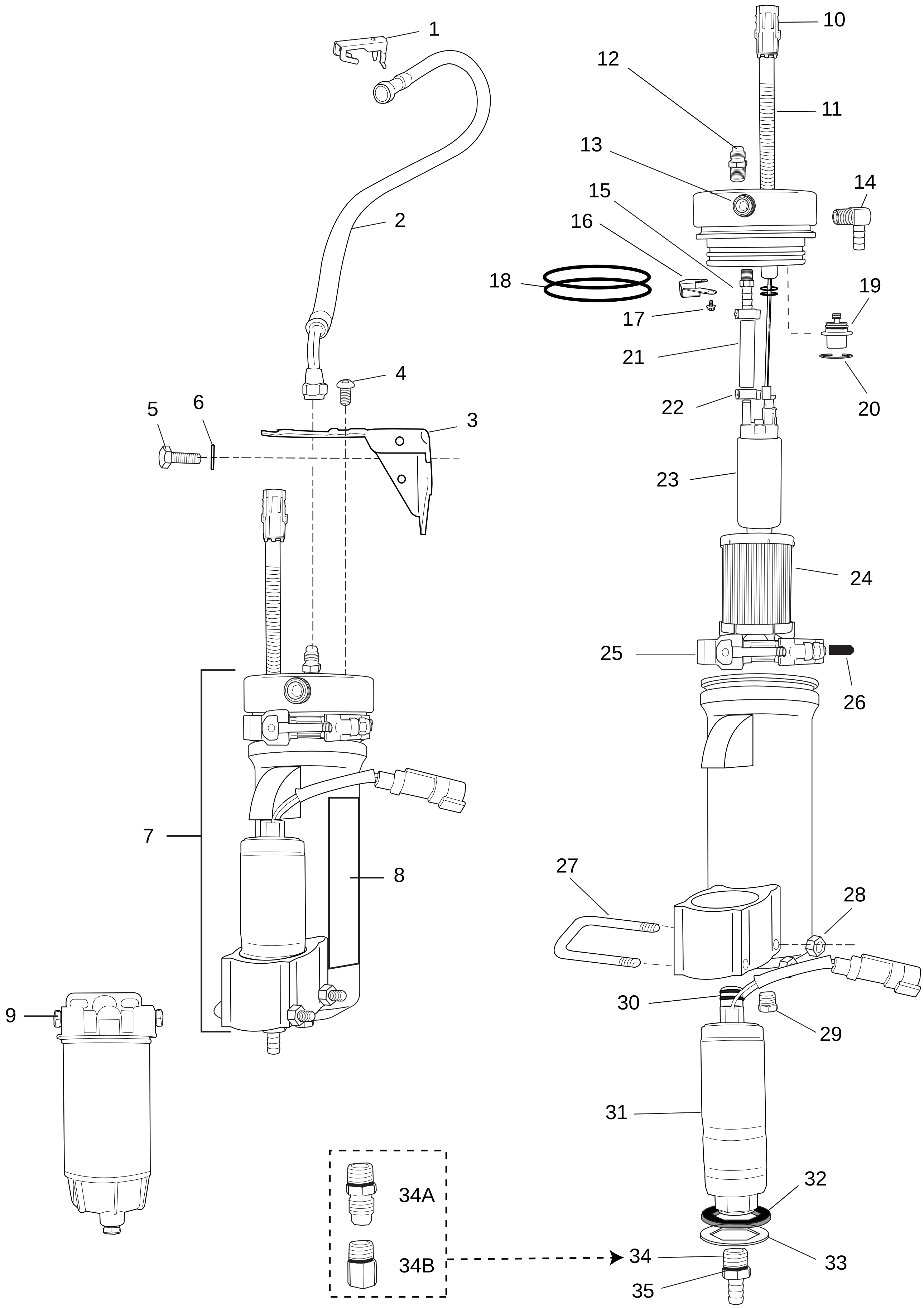
FUEL CONTROL CELL (FCC) COMPONENTS - SN 670001 through 671343 - FIGURE 9



## FUEL CONTROL CELL (FCC) COMPONENTS - SN 670001 through 671343 - FIGURE 9

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | RA080030A | 1 | **Fuel Control Cell Assembly** | |
| 2 | R121085A | 1 | **Harness**, 1-piece, FCC pass through<br>(1-piece harness **does not** retro fit for 2-piece harness) | |
| 2A | 7172040 | 1 | **Connector**, W/P 2-way Female | |
| 2B | R012030 | 1 | **Baffle**, FCC used w/1-piece harness | |
| 2C | 91620025 | 2 | **Screw**, self tapping, baffle/1-piece harness retaining | |
| 3 | R024175 | 1 | **Fitting**, 1/4 NPT X SAE | |
| 4 | R024225 | 1 | **Fitting**, 1/4 NPT to Hose (return to tank) | |
| 4 | R024224 | AR | **Fitting**, 1/4 NPT to SAE (return to tank) | |
| 5 | R024163 | 1 | **Fitting**, 1/4 NPT X SAE (from LPFP) | |
| 6 | R088004 | 1 | **Regulator**, fuel pressure (FCC System Only) | |
| 7 | R048070 | 1 | **Retainer**, fuel pressure regulator | |
| 8 | R045098B | 1 | **Hose**, 5/16id X 1/2od X 2 1/2 | |
| 9 | R127087 | 2 | **Clamp**, Oetiker, 5/8 | |
| 10 | RA080027 | 1 | **Pump**, high pressure fuel | |
| 11 | R080026 | 1 | **Filter**, fuel (FCC) | |
| NI | RP080026 | 1 | **Kit**, FCC filter and O-rings | |
| 12 | R171010 | 1 | **Clamp**, FCC | |
| 13 | R128002 | 1 | **Cover**, T-bolt end | |
| 14 | R143112A | 1 | **Decal**, FCC | |
| 15 | RS3554 | 1 | **Plug**, pipe, hex head, 1/8 | |
| 16A | RA121060 | 1 | **Harness**, FCC Feed through | |
| 16B | RA121061A | 1 | **Harness**, FCC internal | |
| 17 | R024219 | 1 | **Fitting**, 1/8 NPT X 5/16 Barb | |
| 18 | R047241 | 1 | **O-Ring**, FCC sealing | |
| 19 | RS3550 | 1 | **Plug**, pipe, hex socket, 1/4 | |
| 20 | R127100 | 1 | **Retainer**, fuel line | |
| 21 | RA085090 | 1 | **Hose Assembly**, FCC to fuel rail (inlet) | |
| 22 | 90384075 | 3 | **Bolt**, FCC attaching | |
| 23 | R090227 | 1 | **Bracket**, FCC mounting | |
| 24 | R090228A | 1 | **Bracket**, low-pressure fuel pump mounting | |
| 25 | RS1521L | 3 | **Locking Nut**, low-pressure fuel pump | |
| 26 | R096142 | 3 | **Washer**, flat, mounting, upper | |
| 27 | R094035A | 3 | **Grommet**, isolator | |
| 28 | R096141 | 3 | **Washer**, fuel pump mounting, lower | |
| 29 | RS0251 | 2 | **Bolt**, pre-filter bracket attaching | |
| 30 | RS1078 | 2 | **Nut**, w/lockwasher, pre-filter bracket attaching | |
| 31 | R090272 | 1 | **Bracket**, pre-filter mounting | |
| 32 | R024192 | 2 | **Fitting**, 90 degree, LPFP | |
| 33 | R094040 | 1 | **Isolator**, rubber, w/ adhesive | |
| 34 | RS3858 | 1 | **Clamp**, pre-filter 1 ¼” | |
| 35 | R143174 | 1 | **Decal**, pre-filter | |
| 36 | 30603 | AR | **Fitting**, fuel inlet, pre-filter, 3/8 NPT X 1/2 SAE | |
| 36 | R024218 | 1 | **Fitting**, fuel inlet, pre-filter, 3/8 NPT X 1/2 hose barb | |
| 37 | RA077014 | 1 | **Fuel Pre-filter Assembly, 150 micron** | |
| 38 | RP077014 | 1 | **Kit,** fuel filter and seal | |
| 39 | RA080018 | 1 | **Fuel Pump**, low-pressure | |
| 40 | RA085070 | 1 | **Hose Assembly**, low-pressure pump to FCC | |
| 41 | 98443025 | 4 | **Bolt**, FCC/LPFP bracket attaching, block | |
| 42 | 93940000 | 4 | **Lockwasher**, FCC/LPFP bracket attaching, block | |
| NI | R143114 | 1 | **Decal**, Warning, fuel leaks | |

FUEL CONTROL CELL (FCC) COMPONENTS (SN 671344 and above) - FIGURE 10

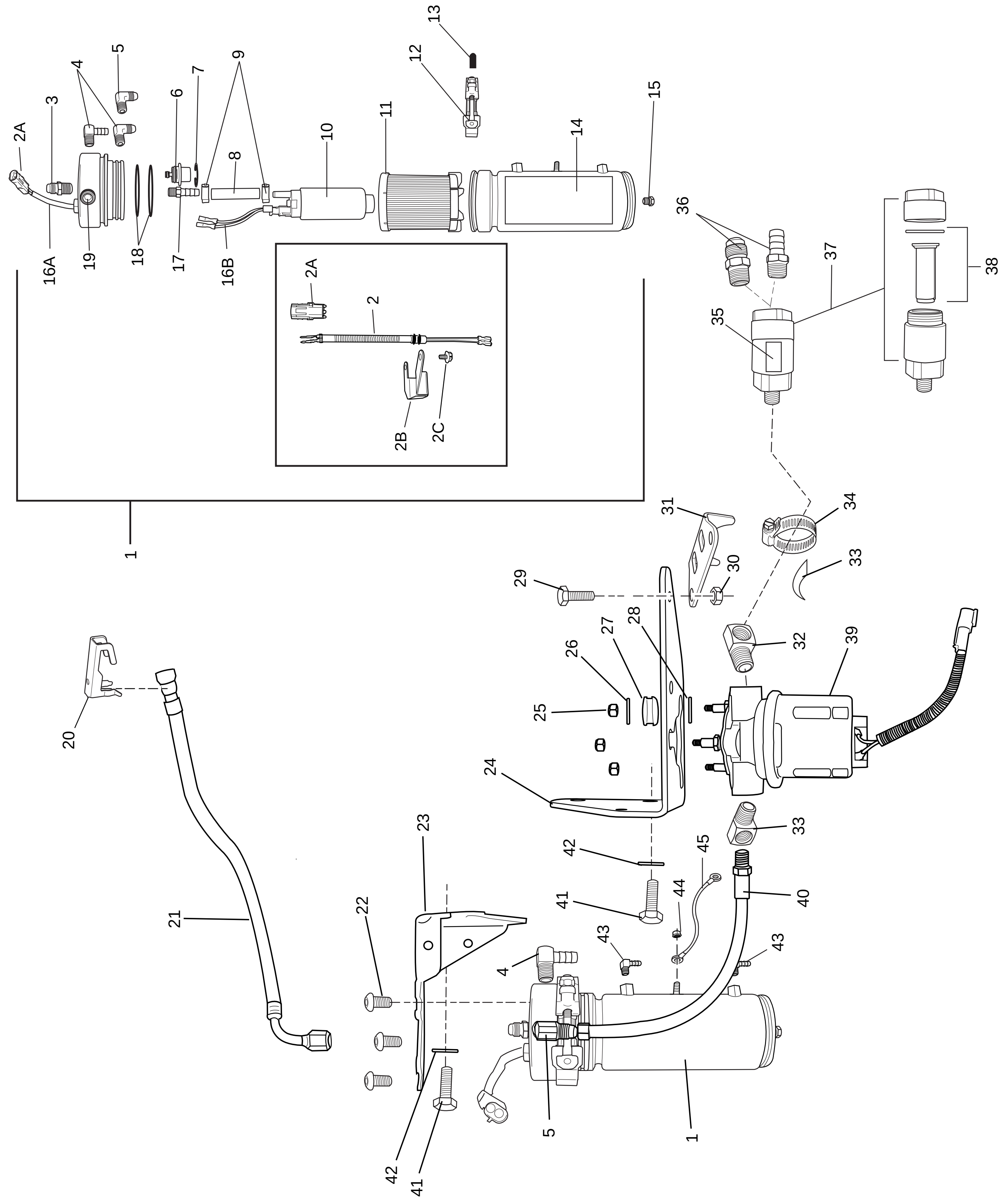


# FUEL CONTROL CELL (FCC) COMPONENTS (SN 671344 and above) - FIGURE 10

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | R127100 | 2 | **Locking Clip**, fuel line | |
| 2 | RA085090 | 1 | **Hose Assembly**, FCC to fuel rail (inlet) | |
| 3 | R090227 | 1 | **Bracket**, FCC mounting | |
| NI | R143114 | 1 | **Decal**, Warning, fuel leaks | |
| 4 | 90384075 | 3 | **Bolt**, FCC mounting | |
| 5 | 98443025 | 2 | **Bolt**, FCC mounting bracket | |
| 6 | 93940000 | 2 | **Lockwasher**, FCC mounting bracket | |
| 7 | RA080035 | 1 | **FCC Assembly** | |
| 8 | R143112C | 1 | **Decal**, FCC | |
| 9 | RA080033 | 1 | **Filter Assembly**, primary fuel (See Figure xx) | |
| 10 | 7172040 | 1 | **Connector**, W/P 2-Way Female | |
| 11 | R1210085A | 1 | **Harness**, 1 piece, FCC high pressure fuel pump | |
| 12 | R024175 | 1 | **Fitting**, FCC head (fuel supply line) | |
| 13 | RS3550 | 2 | **Plug**, FCC head | |
| 14 | R024225 | 1 | **Fitting**, 90 degree | |
| 15 | R024219 | 1 | **Fitting**, FCC internal | |
| 16 | R012030 | 1 | **Baffle**, fuel | |
| 17 | 91620025 | 2 | **Screw**, self-tapping, baffle/harness retaining | |
| 18 | R047241 | 2 | **O'Ring**, FCC bowl-to-head seal | |
| 19 | R088004 | 1 | **Regulator**, fuel pressure | |
| 20 | R048070 | 1 | **Retainer**, fuel pressure regulator | |
| 21 | R045098B | 1 | **Hose**, FCC internal fuel | |
| 22 | R127087 | 2 | **Clamp**, Oeticker | |
| 23 | RA080027 | 1 | **Pump**, FCC high pressure fuel | |
| 24 | R080026 | 1 | **Filter**, FCC | |
| 25 | R171010 | 1 | **Clamp**, FCC bowl-to-head retaining | |
| 26 | R128002 | 1 | **Cover**, FCC clamp T-bolt | |
| 27 | R127102 | 1 | **U-Bolt**, low pressure fuel pump retaining | |
| 28 | 95004300 | 2 | **Nut**, Nylock, low-pressure fuel pump retaining | |
| 29 | RS3554 | 1 | **Plug**, FCC drain | |
| 30 | R047252 | 2 | **O'Ring**, LPFP seal | |
| 31 | RA080032 | 1 | **Fuel Pump**, low-pressure | |
| 32 | R094045 | 1 | **Isolator**, LPFP mounting | |
| 33 | R169064 | AR | **Shim**, LPFP mounting, 11 gage | |
| 33 | R169064A | AR | **Shim**, LPFP mounting, 16 gage | |
| 33 | R169064B | AR | **Shim**, LPFP mounting, 22 gage | |
| 34 | R024230 | 1 | **Fitting**, LPFP to 1/2" Hose barb | |
| 34A | R024231 | 1 | **Fitting**, LPFP to 8-JIC | 22-810-XX, 22-810V-XX |
| 34B | R024241 | 1 | **Fitting**, LPFP to -6 NPTF | 23-811-XX, 23-810-XX, 23-810V-XX |
| 35 | R047251 | 1 | **O'Ring**, seal (p/o item 34) | |
| NI | RP080026 | 1 | **Kit, Filter and O-Rings**, FCC | |

**IMPORTANT: O-rings specified above are specifically rated for fuel system use. DO NOT substitute O-rings. After installation of an O-ring, always lubricate O-rings with O-ring lubricant, specified for fuel use, prior to assembly.**

RETURNLESS FUEL SYSTEM COMPONENTS - SN 670001 through 671343 - FIGURE 11

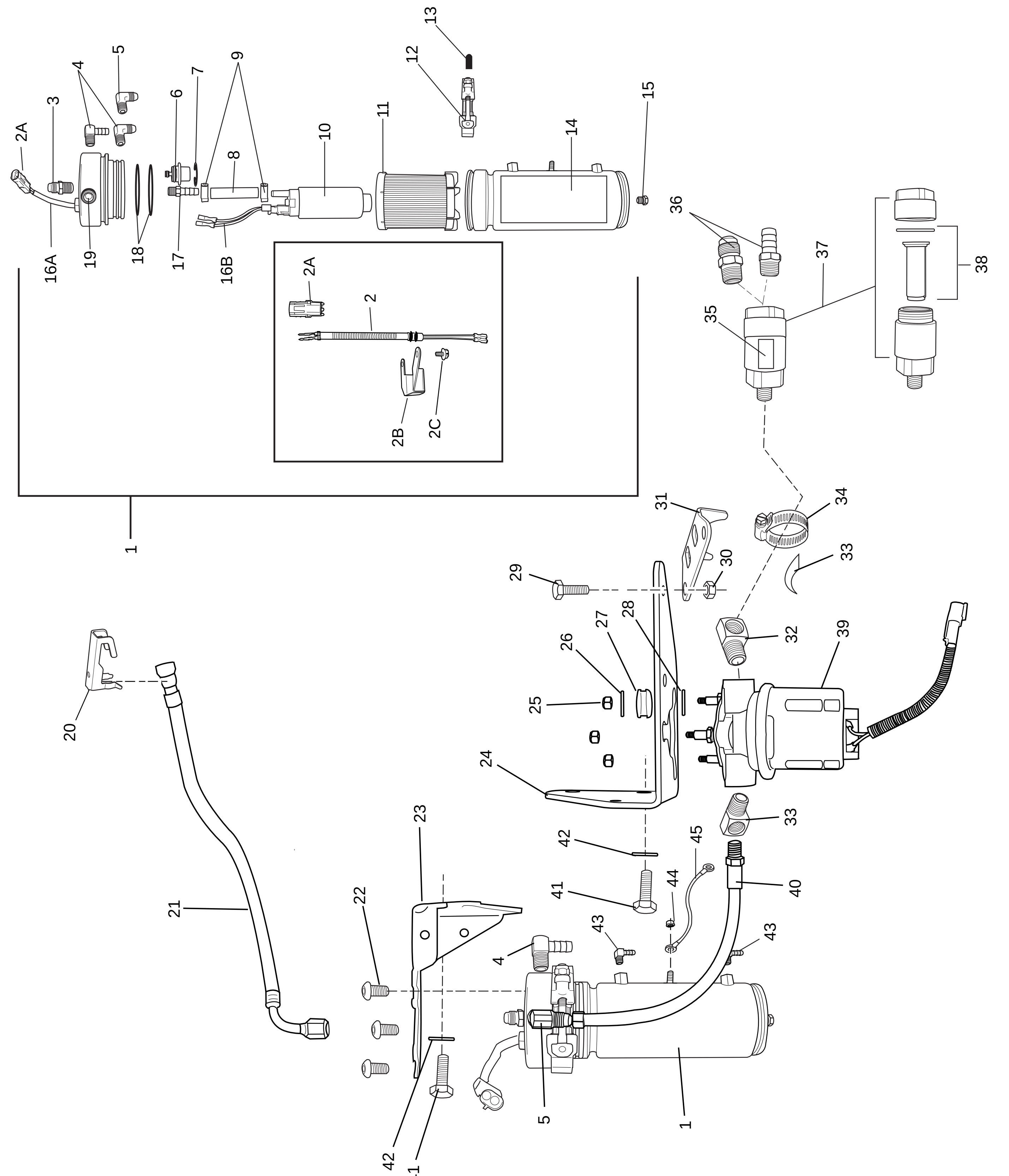



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## RETURNLESS FUEL SYSTEM COMPONENTS - SN 670001 through 671343 - FIGURE 11

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| | | | | 20-810-01, 20-810-02, 20-810V-01, 25-811-02, 25-810-02, 30-811-01, 50-811-(ALL), 50-811V-01, 50-810-(ALL), 50-810V-01 |
| 1 | RA080030B | 1 | **Fuel Control Cell Assembly** | |
| 2 | R121085A | 1 | **Harness**, 1-piece, FCC pass through (1-piece harness **does not** retro fit for 2-piece harness) | |
| 2A | 7172040 | 1 | **Connector**, W/P 2-way Female | |
| 2B | R012030 | 1 | **Baffle**, FCC used w/1-piece harness | |
| 2C | 91620025 | 2 | **Screw**, self tapping, baffle/1-piece harness retaining | |
| 3 | R024175 | 1 | **Fitting**, 1/4 NPT X SAE | |
| 4 | R024225 | 1 | **Fitting**, 1/4 NPT to Hose (return to tank) | |
| 4 | R024224 | AR | **Fitting**, 1/4 NPT to SAE (return to tank) | |
| 5 | R024163 | 1 | **Fitting**, 1/4 NPT X SAE (from LPFP) | |
| 6 | R088004 | 1 | **Regulator**, fuel pressure (FCC System Only) | |
| 7 | R048070 | 1 | **Retainer**, fuel pressure regulator | |
| 8 | R045098B | 1 | **Hose**, 5/16id X 1/2od X 2 1/2 | |
| 9 | R127087 | 2 | **Clamp**, Oetiker, 5/8 | |
| 10 | RA080027 | 1 | **Pump**, high pressure fuel | |
| 11 | R080026 | 1 | **Filter**, fuel (FCC) | |
| NI | RP080026 | 1 | **Kit**, FCC filter and O-rings | |
| 12 | R171010 | 1 | **Clamp**, FCC | |
| 13 | R128002 | 1 | **Cover**, T-bolt end | |
| 14 | R143112A | 1 | **Decal**, FCC | |
| 15 | RS3554 | 1 | **Plug**, pipe, hex head, 1/8 | |
| 16A | RA121060 | 1 | **Harness**, FCC Feed through | |
| 16B | RA121061A | 1 | **Harness**, FCC internal | |
| 17 | R024219 | 1 | **Fitting**, 1/8 NPT X 5/16 Barb | |
| 18 | R047241 | 1 | **O-Ring**, FCC sealing | |
| 19 | RS3550 | 1 | **Plug**, pipe, hex socket, 1/4 | |
| 20 | R127100 | 1 | **Retainer**, fuel line | |
| 21 | RA085090 | 1 | **Hose Assembly**, FCC to fuel rail (inlet) | |
| 22 | 90384075 | 3 | **Bolt**, FCC attaching | |
| 23 | R090227 | 1 | **Bracket**, FCC mounting | |
| 24 | R090228A | 1 | **Bracket**, low-pressure fuel pump mounting | |
| 25 | RS1521L | 3 | **Locking Nut**, low-pressure fuel pump | |
| 26 | R096142 | 3 | **Washer**, flat, mounting, upper | |
| 27 | R094035A | 3 | **Grommet**, isolator | |
| 28 | R096141 | 3 | **Washer**, fuel pump mounting, lower | |
| 29 | RS0251 | 2 | **Bolt**, pre-filter bracket attaching | |
| 30 | RS1078 | 2 | **Nut**, w/lockwasher, pre-filter bracket attaching | |
| 31 | R090272 | 1 | **Bracket**, pre-filter mounting | |
| 32 | R024192 | 2 | **Fitting**, 90 degree, LPFP | |
| 33 | R094040 | 1 | **Isolator**, rubber, w/ adhesive | |
| 34 | RS3858 | 1 | **Clamp**, pre-filter 1 ¼” | |

RETURNLESS FUEL SYSTEM COMPONENTS - SN 670001 through 671343 - FIGURE 11 (cont'd)

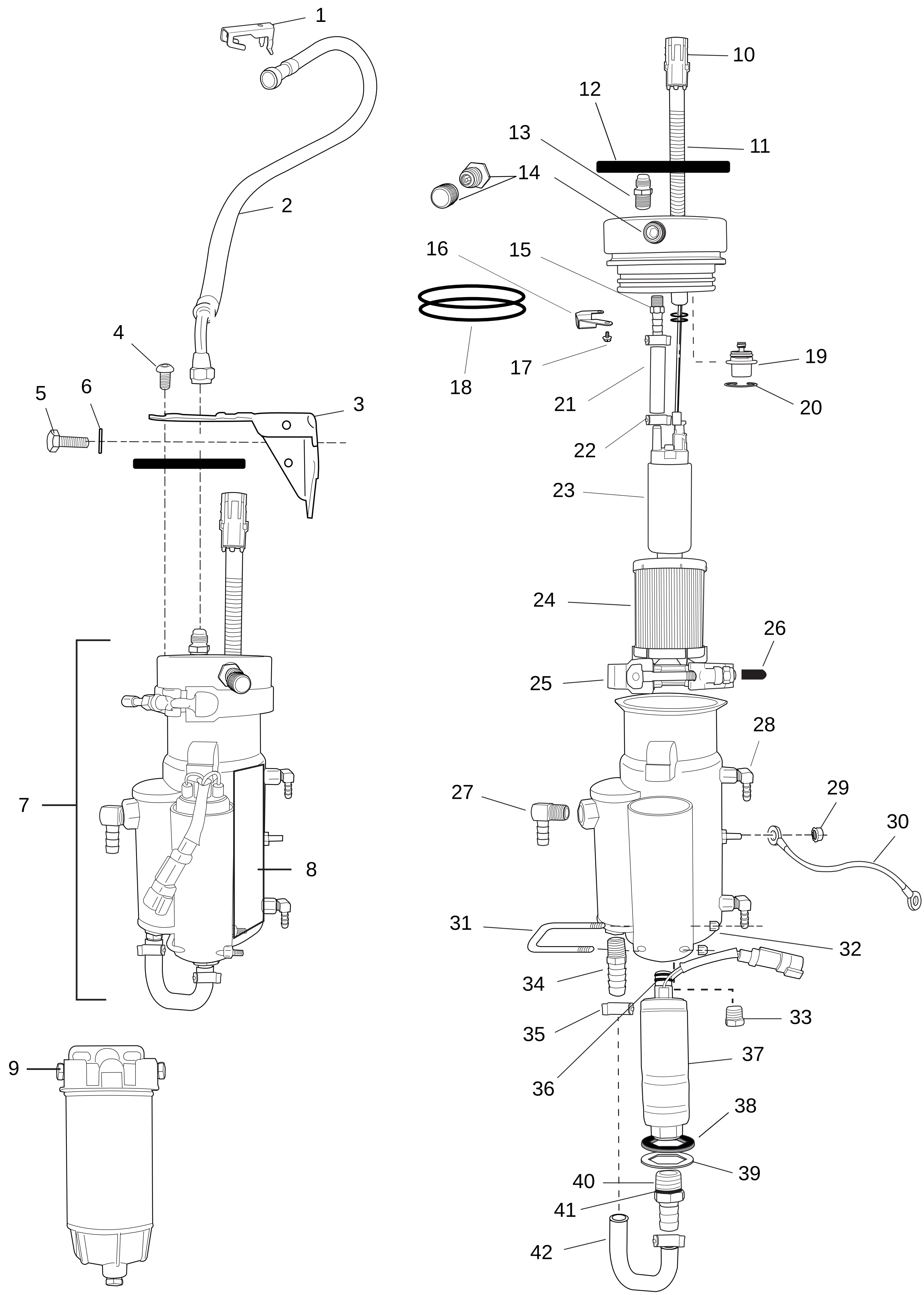


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## RETURNLESS FUEL SYSTEM COMPONENTS - SN 670001 through 671343 - FIGURE 11 (cont'd)

| ITEM | PART NO. | QTY | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| | | | | 20-810-01, 20-810-02, 20-810V-01, 25-811-02, 25-810-02, 30-811-01, 50-811-(ALL), 50-811V-01, 50-810-(ALL), 50-810V-01 |
| 35 | R143174 | 1 | **Decal**, pre-filter | |
| 36 | 30603 | AR | **Fitting**, fuel inlet, pre-filter, 3/8 NPT X 1/2 SAE | |
| 37 | R024218 | 1 | **Fitting**, fuel inlet, pre-filter, 3/8 NPT X 1/2 hose barb | |
| 37 | RA077014 | 1 | **Fuel Pre-filter Assembly, 150 micron** | |
| 38 | RP077014 | 1 | **Kit,** fuel filter and seal | |
| 39 | RA080018 | 1 | **Fuel Pump**, low-pressure | |
| 40 | RA085070 | 1 | **Hose Assembly**, low-pressure pump to FCC | |
| 41 | 98443025 | 4 | **Bolt**, FCC/LPFP bracket attaching, block | |
| 42 | 93940000 | 4 | **Lockwasher**, FCC/LPFP bracket attaching, block | |
| NI | R143114 | 1 | **Decal**, Warning, fuel leaks | |
| 43 | R024055 | 2 | **Fitting**, 90 degree, to hose | |
| 44 | RS1078 | 1 | **Nut**, KEPS, ground wire attaching | |
| 45 | R101013A | 1 | **Wire**, grounding | |

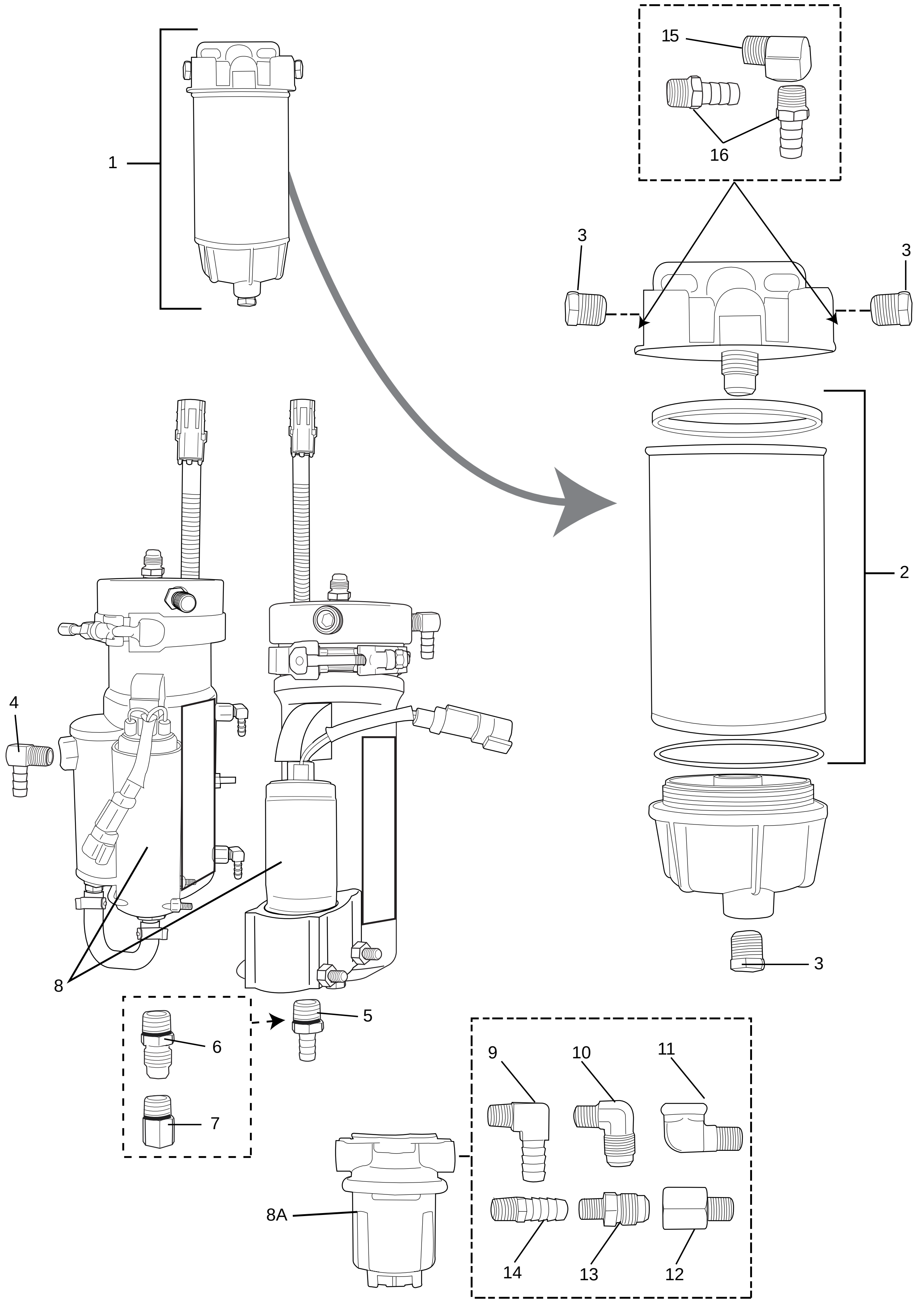
RETURNLESS FUEL SYSTEM COMPONENTS (SN 671344 and above) - FIGURE 12



## RETURNLESS FUEL SYSTEM COMPONENTS (SN 671344 and above) - FIGURE 12

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| | | | | 20-810-01, 20-810-02, 20-810V-01, 25-811-02, 25-810-02, 30-811-01, 50-811-(ALL), 50-811V-01, 50-810-(ALL), 50-810V-01 |
| 1 | R127100 | 2 | **Locking Clip**, fuel line | |
| 2 | RA085090 | 1 | **Hose Assembly**, FCC to fuel rail (inlet) | |
| 3 | R090227 | 1 | **Bracket**, FCC mounting | |
| NI | R143114 | 1 | **Decal**, Warning, fuel leaks | |
| 4 | 90384100 | 3 | **Bolt**, FCC mounting | |
| 5 | 98443025 | 2 | **Bolt**, FCC mounting bracket | |
| 6 | 93940000 | 2 | **Lockwasher**, FCC mounting bracket | |
| 7 | RA080035A | 1 | **FCC Assembly** | |
| 8 | R143112C | 1 | **Decal**, FCC | |
| 9 | RA080033 | 1 | **Filter Assembly**, primary fuel (See Figure xx) | |
| 10 | 7172040 | 1 | **Connector**, W/P 2-Way Female | |
| 11 | R1210085A | 1 | **Harness**, 1 piece, FCC high pressure fuel pump | |
| 12 | R062091 | 1 | **Isolator**, FCC mounting | |
| 13 | R024175 | 1 | **Fitting**, FCC head (fuel supply line) | |
| 14 | RS3550 | 2 | **Plug**, FCC head | |
| 14 | RA035042 | 1 | **Valve**,Schrader | |
| NI | R143188 | 1 | **Decal**, schrader valve | |
| 15 | R024219 | 1 | **Fitting**, FCC internal | |
| 16 | R012030 | 1 | **Baffle**, fuel | |
| 17 | 91620025 | 2 | **Screw**, self-tapping, baffle/harness retaining | |
| 18 | R047241 | 2 | **O'Ring**, FCC bowl-to-head seal | |
| 19 | R088004 | 1 | **Regulator**, fuel pressure | |
| 20 | R048070 | 1 | **Retainer**, fuel pressure regulator | |
| 21 | R045098B | 1 | **Hose**, FCC internal fuel | |
| 22 | R127087 | 2 | **Clamp**, Oeticker | |
| 23 | RA080027 | 1 | **Pump**, FCC high pressure fuel | |
| 24 | R080026 | 1 | **Filter**, FCC | |
| 25 | R171010 | 1 | **Clamp**, FCC bowl-to-head retaining | |
| 26 | R128002 | 1 | **Cover**, FCC clamp T-bolt | |
| 27 | R024242 | 2 | **Fitting**, 90 degree, 3/8 NPT X 1/2" hose | |
| 28 | R024055 | 2 | **Fitting**, 90 degree, 1/8 NPT X 1/4" hose | |
| 29 | R101013 | 2 | **Bonding**, wire | |
| 30 | RS1078 | 2 | **Nut**, KEPS, bonding wirte retaining | |
| 31 | R127102 | 1 | **U-Bolt**, low pressure fuel pump retaining | |
| 32 | 95004300 | 2 | **Nut**, Nylock, low-pressure fuel pump retaining | |
| 33 | RS3554 | 1 | **Plug**, FCC drain | |
| 34 | 30632 | 1 | **Fitting**, straight | |
| 35 | R127087D | 2 | **Clamp**, Oeticker | |
| 36 | R047252 | 2 | **O'Ring**, LPFP seal | |
| 37 | RA080032 | 1 | **Fuel Pump**, low-pressure | |
| 38 | R094045 | 1 | **Isolator**, LPFP mounting | |
| 39 | R169064 | AR | **Shim**, LPFP mounting, 11 gage | |
| 39 | R169064A | AR | **Shim**, LPFP mounting, 16 gage | |
| 39 | R169064B | AR | **Shim**, LPFP mounting, 22 gage | |
| 40 | R024230 | 1 | **Fitting**, LPFP to 1/2" Hose barb | |
| 41 | R047251 | 1 | **O'Ring**, seal (p/o item 40) | |
| 42 | R045177 | 1 | **Hose**, reservoir to LPFP input | |
| NI | RP080026 | 1 | **Kit, Filter and O-Rings**, FCC | |

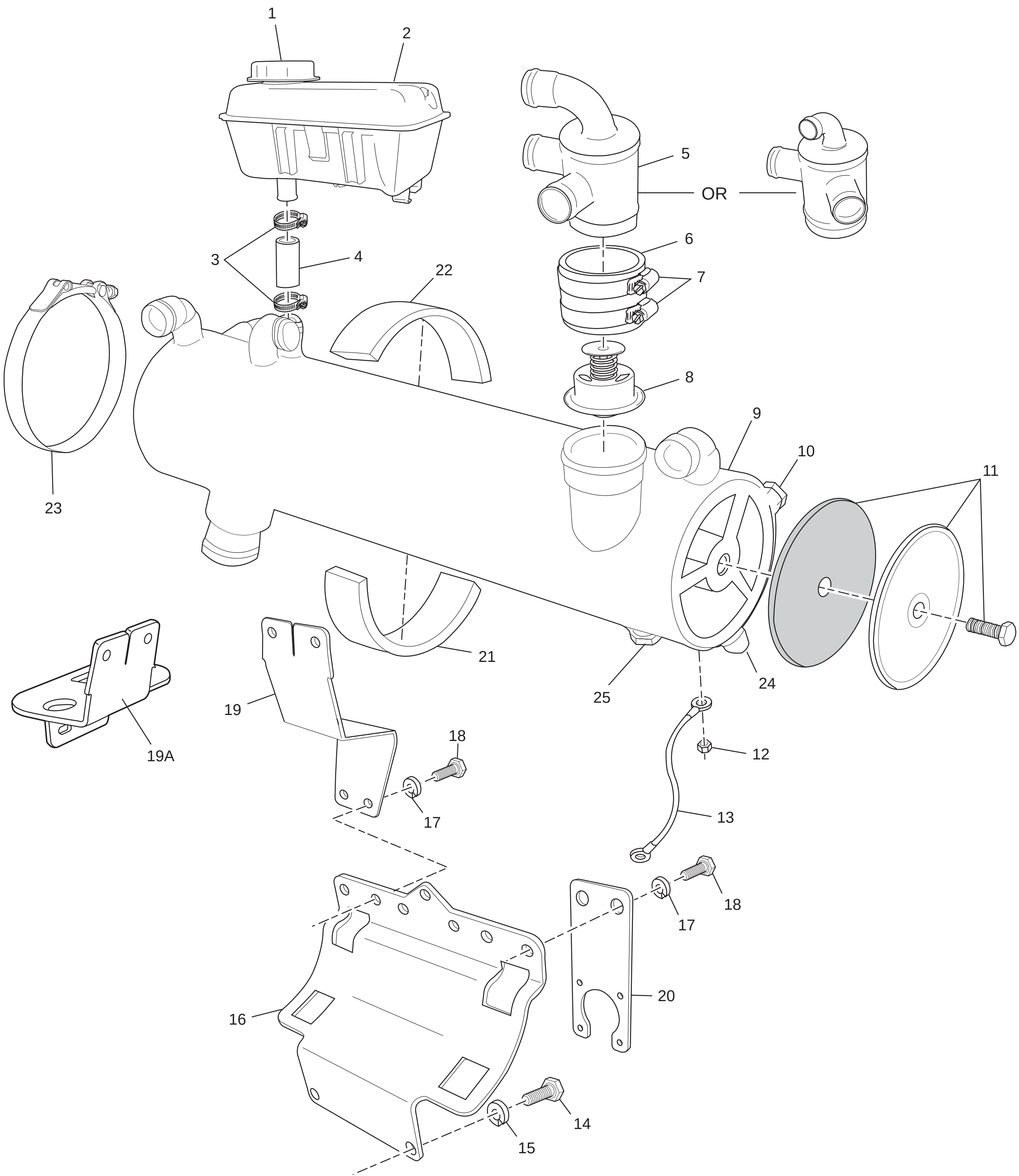
## OPTIONAL - FUEL/WATER SEPARATOR COMPONENTS - FIGURE 13



## OPTIONAL - FUEL/WATER SEPARATOR COMPONENTS - FIGURE 13

| ITEM | PART NO. | QTY | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | RA080033 | 1 | **Fuel / Water Separator Assembly** | |
| 2 | R080033 | AR | **Filter and Seals** | |
| 3 | RS3557 | 3 | **Plug**, 3/8 NPT brass | |
| 4 | R024242 | 1 | **Fitting**, 90 degree, 3/8 NPT X 1/2” hose | |
| 5 | R024230 | 1 | **Fitting**, LPFP to 1/2” hose | |
| 6 | R024231 | AR | **Fitting**, LPFP to 8-JIC | 22-810-XX, 22-810V-XX |
| 7 | R024241 | AR | **Fitting**, LPFP to -6 NPTF | 23-811-XX, 23-811V-XX, 23-810V-XX |
| 8 | RA080032 | - | **Fuel Pump**, Low Pressure - FCC mounted | |
| 8A | RA080018 | - | **Fuel Pump**, Low Pressure - Remote mounted | |
| 9 | R024207 | AR | **Fitting,** Elbow, 1/4 NPT X 1/2 hose | |
| 10 | R024201 | AR | **Fitting,** Elbow, 1/4 NPT X 1/2 SAE | |
| 11 | R024236 | AR | **Fitting,** Elbow, 1/4 NPT (male) X 3/8 NPT (female) | |
| 12 | R024235 | AR | **Fitting,** Straight, 1/4 NPT (male) X 3/8 NPT (female) | |
| 13 | R024227 | AR | **Fitting,** Straight, 1/4 NPT X 1/2 SAE | |
| 14 | 30632 | AR | **Fitting,** Straight, 1/4 NPT X 1/2 hose | |
| 15 | 30646 | AR | **Fitting,** Elbow, 3/8 NPT (male) X 3/8 NPT (female) | |
| 16 | R024218 | AR | **Fitting,** Straight, 3/8 NPT X 1/2 hose | |
| NI | RK080033 | AR | **Fuel / Water Separator Kit, (**includes items 1,9, 14, 15, and 16) | |

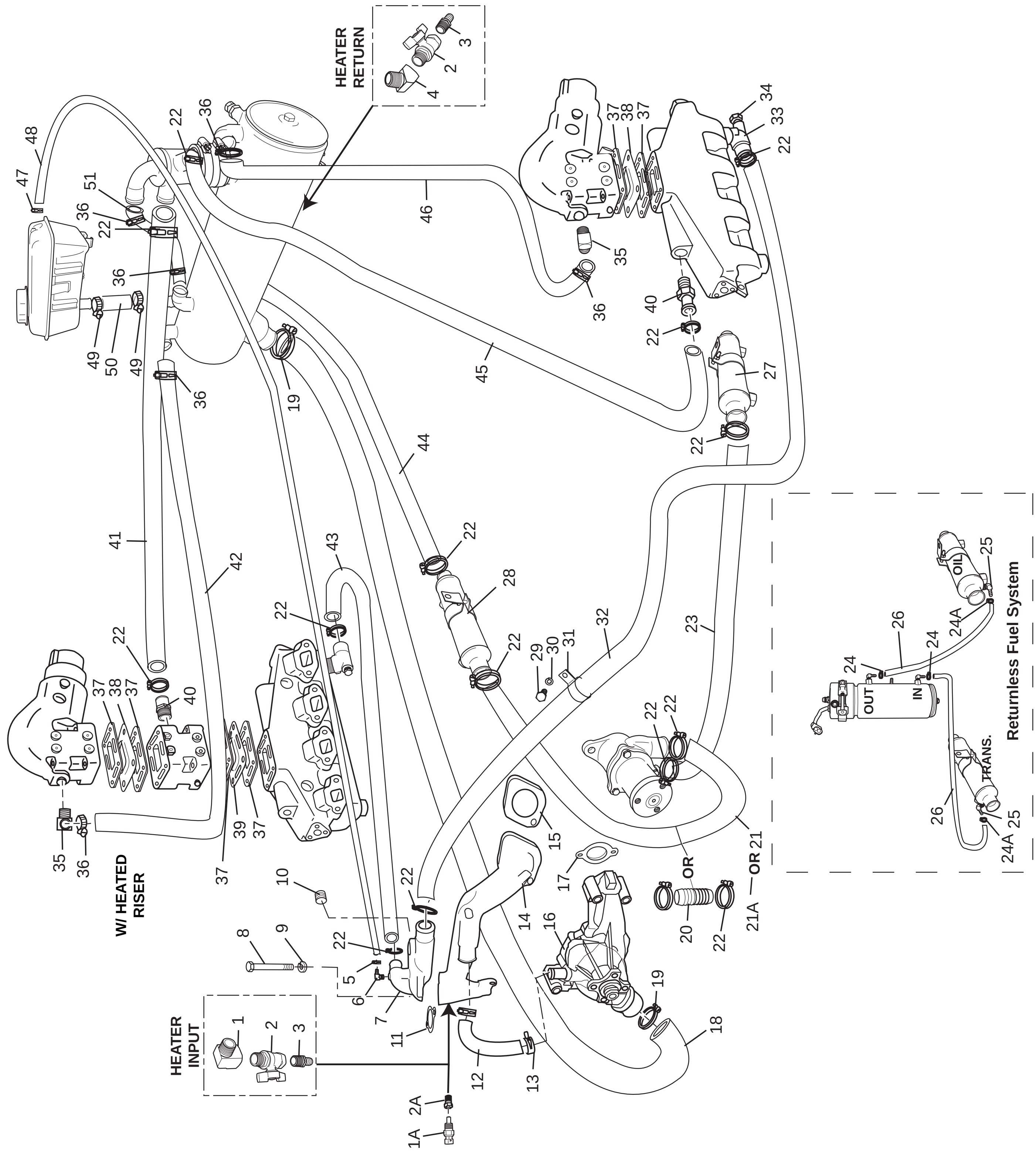
# HEAT EXCHANGER and COMPONENTS - FIGURE 14



## HEAT EXCHANGER and COMPONENTS - FIGURE 14

| ITEM | PART NO. | QTY | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | R034045 | 1 | **Cap**, degas bottle | |
| 2 | R146001 | 1 | **Bottle**, degas | |
| NI | R143172 | AR | **Decal**, specification, 8.1 STD, FCC | |
| NI | R143172B | AR | **Decal**, specification, 8.1 STD, returnless fuel system | 20-810-01, 20-810-02, 20-810V-01, 25-810-02, 50-810-(ALL), 50-810V-01 |
| NI | R143173 | AR | **Decal**, specification, 8.1 HO, FCC | |
| NI | R143173B | AR | **Decal**, specification, 8.1 HO, returnless fuel system | 25-811-02, 30-811-01, 50-811-(ALL), 50-811V-01 |
| NI | R143153 | 1 | **Decal,** coolant fill | |
| 3 | RS3854 | 2 | **Clamp**, hose | |
| 4 | R045153 | 1 | **Hose,** degas bottle to heat exchanger | |
| 4 | R045161 | 1 | **Hose,** degas bottle to heat exchanger, v-drive | 07-811V-01 |
| 5 | R025027A | 1 | **Housing**, thermostat | |
| 5 | R025027B | 1 | **Housing**, thermostat | 07-811V-01 |
| 6 | R045162 | 1 | **Hose,** thermostat housing | |
| 7 | RS3860 | 2 | **Clamp**, thermostat housing | |
| 8 | R026007 | 1 | **Thermostat**, 170°F | |
| 9 | RA147039B | 1 | **Heat Exchanger Assembly** | |
| 10 | R168005 | 1 | **Anode**, sacrificial zinc | |
| 11 | 23540 | AR | **End Cap Kit**, heat exchanger | |
| 12 | RS1078 | 1 | **Nut**, ground wire stud | |
| 13 | R101013 | 1 | **Wire**, grounding | |
| 14 | RS0304 | 2 | **Bolt**, heat exchanger bracket attaching | |
| 15 | RS2180 | 2 | **Lockwasher**, heat exchanger bracket attaching | |
| 16 | R090258 | 1 | **Bracket**, heat exchanger | |
| 17 | RS2179 | 4 | **Lockwasher**, bracket attaching | |
| 18 | 98333020 | 4 | **Bolt**, bracket attaching | |
| 19 | R090311 | 1 | **Bracket**, degas bottle | |
| 19A | R090322 | 1 | **Bracket**, degas bottle, v-drive | 07-811V-01 |
| 20 | R090291 | 1 | **Bracket**, 10-pin connector | |
| 21 | R094040 | 2 | **Isolator**, rubber w/adhesive, bottom | |
| 22 | R094041 | 2 | **Isolator**, rubber, top | |
| 23 | R171009 | 2 | **Clamp**, heat exchanger | |
| 24 | RS3552 | 1 | **Plug**, raw water drain (1/4”) | |
| 25 | RS3557 | 1 | **Plug**, fresh water drain (3/8”) | |
| NI | 23627 | 1 | **Decal**, Anode | |
| NI | 22847 | 1 | **Decal**, Caution No Step | |
| NI | 23657 | 1 | **Decal**, heat exchanger | |
| NI | R143156 | 1 | **Decal**, raw water drain | |
| NI | R143257 | 1 | **Decal**, fresh water drain | |
| NI | R143158 | 1 | **Decal**, “Ultra Low Emmissions” | |
| NI | R143184-07 | 1 | **Decal**, Emissions MY ‘07 (8.1L STD) | xx-810x-xx |
| NI | R143185-07 | 1 | **Decal**, Emissions MY ‘07 (8.1L HO) | xx-811x-xx |
| NI | R143168-07 | 1 | **Decal**, Emissions MY ‘07 (8.1L HO) | 07-811V-01 |

# FRESH WATER COOLING SYSTEM COMPONENTS - FIGURE 15

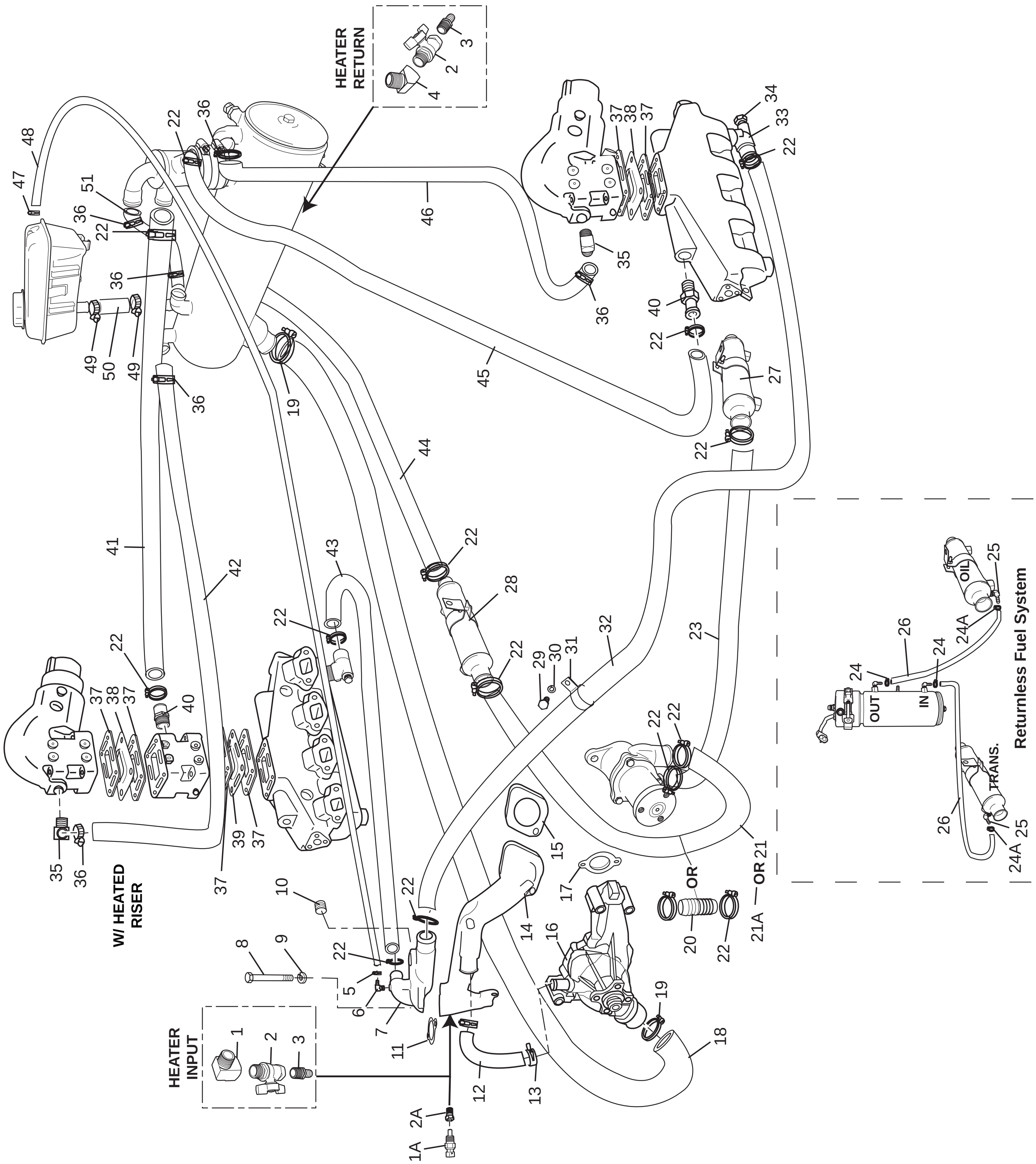



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## FRESH WATER COOLING SYSTEM COMPONENTS - FIGURE 15

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | R024139 | 1 | **Fitting**, 90°, heater applications | 22-810-01, 22-810-02, 22-810V-01 |
| 1A | R020019 | 1 | **Sensor**, Engine Coolant Temperature | |
| 2 | R035039 | 2 | **Valve**, ball, heater applications | 22-810-01, 22-810-02, 22-810V-01 |
| 2A | RS3681 | 1 | **Bushing**, 1/2 NPT X 3/8 NPT | |
| 3 | 30645 | 2 | **Fitting**, 5/8” nipple, heater applications | 22-810-01, 22-810-02, 22-810V-01 |
| 4 | R024209 | 1 | **Fitting**, 45°, heater applications | 22-810-01, 22-810-02, 22-810V-01 |
| 5 | RS3870 | 1 | **Clamp**, hose | |
| 6 | R024055 | 1 | **Fitting**, fill riser (90 degree) | |
| 7 | R025030 | 1 | **Housing**, coolant distribution | |
| 8 | 98443045 | 2 | **Bolt**, distribution housing attaching | |
| 9 | 93940000 | 2 | **Lockwasher**, distribution housing attaching | |
| 10 | RS3551 | 1 | **Plug**, distribution housing | |
| 10 | R020019 | 1 | **Sensor**, Engine Coolant Temperature | 22-810-01, 22-810-02, 22-810V-01 |
| 11 | RM0121 | 1 | **Gasket**, distribution housing to water crossover | |
| 12 | R045116A | 1 | **Hose**, circulation pump to water crossover | |
| 13 | RS3864 | 2 | **Clamp**, hose | |
| 14 | R025034 | 1 | **Water Crossover** | |
| 15 | RM0268 | 1 | **Gasket**, water crossover | |
| 16 | RA057030 | 1 | **Water Pump Assembly** | |
| 17 | RM0266 | 2 | **Gasket**, water pump to engine block | |
| 18 | R045126A | 1 | **Hose**, circulation pump to exchanger | |
| 19 | RS3852 | 2 | **Clamp**, hose (#28) | |
| 20 | R024221 | 1 | **Fitting**, 1 1/4” union | 07-811V-01 |
| 21 | 18402 | 1 | **Hose**, raw water pump to transmission cooler | |
| 21A | R045137 | 1 | **Hose**, raw water pump to transmission cooler (cut to fit) | 07-811V-01 |
| 22 | RS3858 | 18 | **Clamp**, hose (#20) | |
| 23 | R045171 | 1 | **Hose**, raw water pump to oil cooler | |
| 24 | RS3870 | 2 | **Clamp**, hose (1/4”) | 20-810-01, 20-810-02, 20-810V-01, 25-811-02, 25-810-02, 30-811-01, 50-811-(ALL), 50-811V-01, 50-810-(ALL), 50-810V-01 |
| 24A | R127087A | 2 | **Clamp**, Oetiker (1/2”) | 20-810-01, 20-810-02, 20-810V-01, 25-811-02, 25-810-02, 30-811-01, 50-811-(ALL), 50-811V-01, 50-810-(ALL), 50-810V-01 |
| 25 | R024055 | 2 | **Fitting**, 1/8 NPT X 1/4 hose barb | 20-810-01, 20-810-02, 20-810V-01, 25-811-02, 25-810-02, 30-811-01, 50-811-(ALL), 50-811V-01, 50-810-(ALL), 50-810V-01 |
| 26 | R045132 | AR | **Hose**, fuel cooler to oil cooler | 20-810-01, 20-810-02, 20-810V-01, 25-811-02, 25-810-02, 30-811-01, 50-811-(ALL), 50-811V-01, 50-810-(ALL), 50-810V-01 |
| 27 | R1470049 | 1 | **Oil Cooler Assembly** | |
| 28 | R1470006 | 1 | **Transmission Cooler Assembly** | |
| 29 | 98223016 | 1 | **Bolt**, strap clamp attaching | |
| 30 | 93920000 | 1 | **Lockwasher**, strap clamp attaching | |
| 31 | R090082 | 1 | **Clamp**, strap | |
| 32 | R045131 | 1 | **Hose**, distribution housing to exhaust manifold (Port) | |

FRESH WATER COOLING SYSTEM COMPONENTS - FIGURE 15 (cont'd)

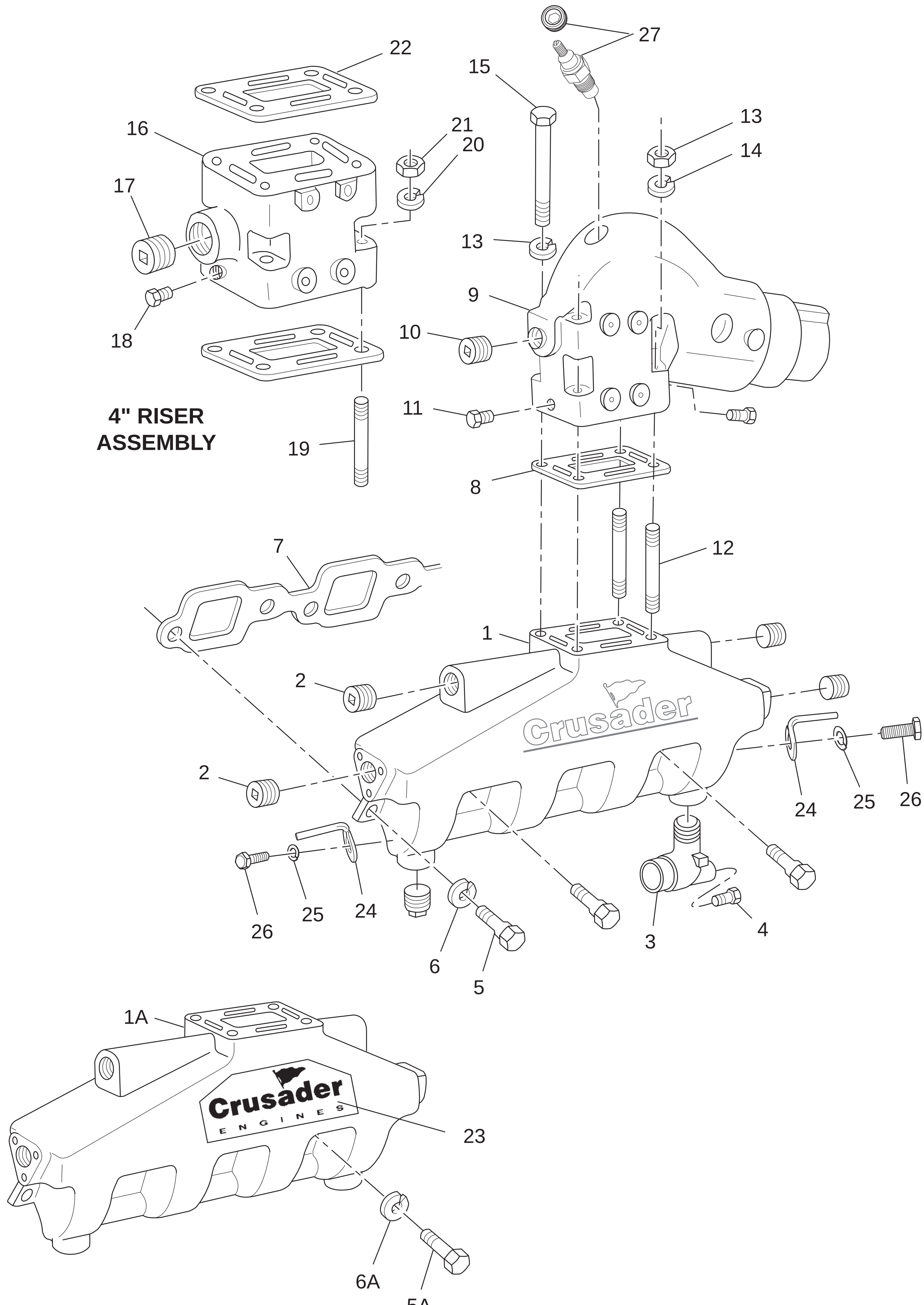



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## FRESH WATER COOLING SYSTEM COMPONENTS - FIGURE 15 (cont'd)

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 33 | 30624 | 2 | **Fitting**, exhaust manifold (90 degree) | |
| 34 | RS3554 | 2 | **Plug**, drain | |
| 35 | R024006A | 2 | **Fitting**, 90 degree | |
| 36 | RS3851 | 6 | **Clamp**, hose (#16) | |
| 37 | 98127 | 8 | **Gasket**, elbow to riser / elbow to manifold / riser to manifold | |
| 38 | 98124 | 2 | **Wing Plate**, blockoff | |
| 39 | 98124A | 2 | **Wing Plate**, pass thru | |
| 40 | 97852 | 2 | **Fitting**, exhaust manifold/riser (1 1/4" hose) | |
| 41 | R045167 | 1 | **Hose**, tstat housing to exhaust manifold (STBD) | |
| 41 | 18414 | 1 | **Hose**, tstat housing to 4" riser (STBD) | |
| 42 | R045124 | 1 | **Hose**, heat exchanger to exhaust elbow (STBD) | |
| 42 | R045124A | 1 | **Hose**, heat exchanger to exhaust elbow (STBD - vdrv) | |
| 43 | R045128 | 1 | **Hose**, distribution housing to exhaust manifold (STBD) | |
| 44 | R045123 | 1 | **Hose**, transmission cooler to exchanger | |
| 45 | R045170 | 1 | **Hose**, tstat housing to exhaust manifold (Port) | |
| 45 | R045145A | 1 | **Hose**, tstat housing to 4" riser (Port) | |
| 46 | R045125 | 1 | **Hose**, heat exchanger to exhaust elbow (Port) | |
| 46 | R045125A | 1 | **Hose**, heat exchanger to exhaust elbow (Port - vdrv) | |
| 47 | R127087 | 1 | **Clamp**, Oeticker | |
| 48 | R045132 | AR | **Hose**, bulk, degas bottle to distribution housing | |
| 49 | RS3854 | 2 | **Clamp**, hose (#12) | |
| 50 | R045153 | AR | **Hose**, bulk, degas bottle to heat exchanger (2") | |
| 51 | R045107 | AR | **Hose**, bulk, bypass, tstat housing to heat exchanger (16") | |
| NI | R128001 | AR | **Cover**, hose clamp end (blue) | |

## EXHAUST MANIFOLD and COMPONENTS - FIGURE 16



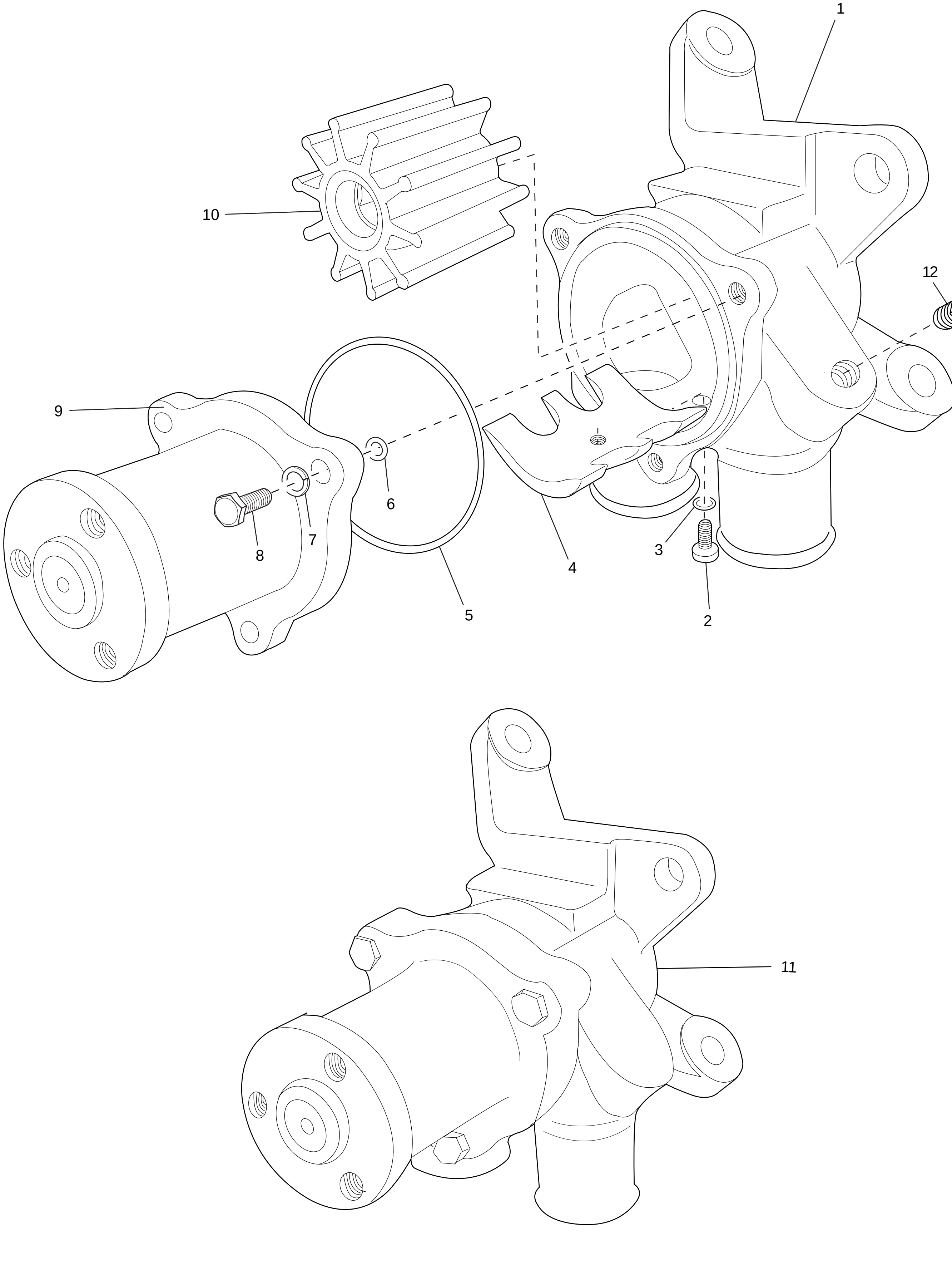

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## EXHAUST MANIFOLD and COMPONENTS - FIGURE 16

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | 98125 | 2 | **Exhaust Manifold (Embossed Logo)** (MUST use bolt R009206) | |
| 1A | R028021 | 2 | **Exhaust Manifold (Picture Frame Logo)** | |
| 2 | 103876 | 8 | **Plug**, exhaust manifold (1") | |
| 3 | 30624 | 2 | **Fitting**, water elbow (90 degree) | |
| 4 | RS3552 | 2 | **Plug**, drain | |
| 5 | R009206 | 16 | **Shouldered Bolt**, manifold (embossed) | |
| 5A | 98333035 | 16 | **Bolt**, manifold (picture frame) | |
| 6 | RS2180 | 16 | **Lockwasher**, manifold bolt (embossed) | |
| 6A | 93930000 | 16 | **Lockwasher**, manifold bolt (picture frame) | |
| 7 | RM0294 | 2 | **Gasket**, manifold to cylinder head | |
| 8 | 98127 | 2 | **Gasket**, manifold to exhaust elbow | |
| 9 | R029015 | 2 | **Exhaust Elbow Assembly**, | |
| 10 | RS3556 | 2 | **Plug**, exhaust elbow (3/4") | |
| 11 | RS3554 | 4 | **Plug**, drain | |
| 12 | 20827 | 4 | **Stud**, exhaust elbow attaching (T) | |
| 13 | 93300000 | 8 | **Lockwasher**, elbow attaching stud | |
| 14 | 95300000 | 4 | **Nut**, elbow attaching stud | |
| 15 | 90305475 | 4 | **Bolt**, exhaust elbow attaching (4 3/4") | |
| * | 22818 | 1 | **4-Inch Riser Kit** | |
| 16 | 98128 | 2 | **Exhaust Riser** | |
| 17 | RS3556 | 2 | **Plug**, exhaust riser (3/4") | |
| 18 | RS3554 | 4 | **Plug**, drain | |
| 19 | 20783 | 8 | **Stud**, riser mounting (2 3/4") | |
| 20 | 93300000 | 8 | **Lockwasher**, riser mounting stud | |
| 21 | 95300000 | 8 | **Nut**, riser mounting stud | |
| 22 | 98127 | 4 | **Gasket**, riser mounting | |
| 23 | R143129 | 2 | **Decal**, exhaust manifold (picure frame) | |
| 24 | R096144 | 4 | **Bracket**, spark plug wire loom | |
| 25 | RS0302 | 4 | **Lockwasher**, attaching bolt | |
| 26 | RS2180 | 4 | **Bolt**, wire loom attaching | |
| 27 | R020047 | 2 | **Switch**, exhaust temperature | |
| 27 | RS3539 | 2 | **Plug**, exhaust elbow | 07-811V-01 |

***NOTE:** See Fresh Water Cooling section for parts used on Fresh Water Cooled engines.

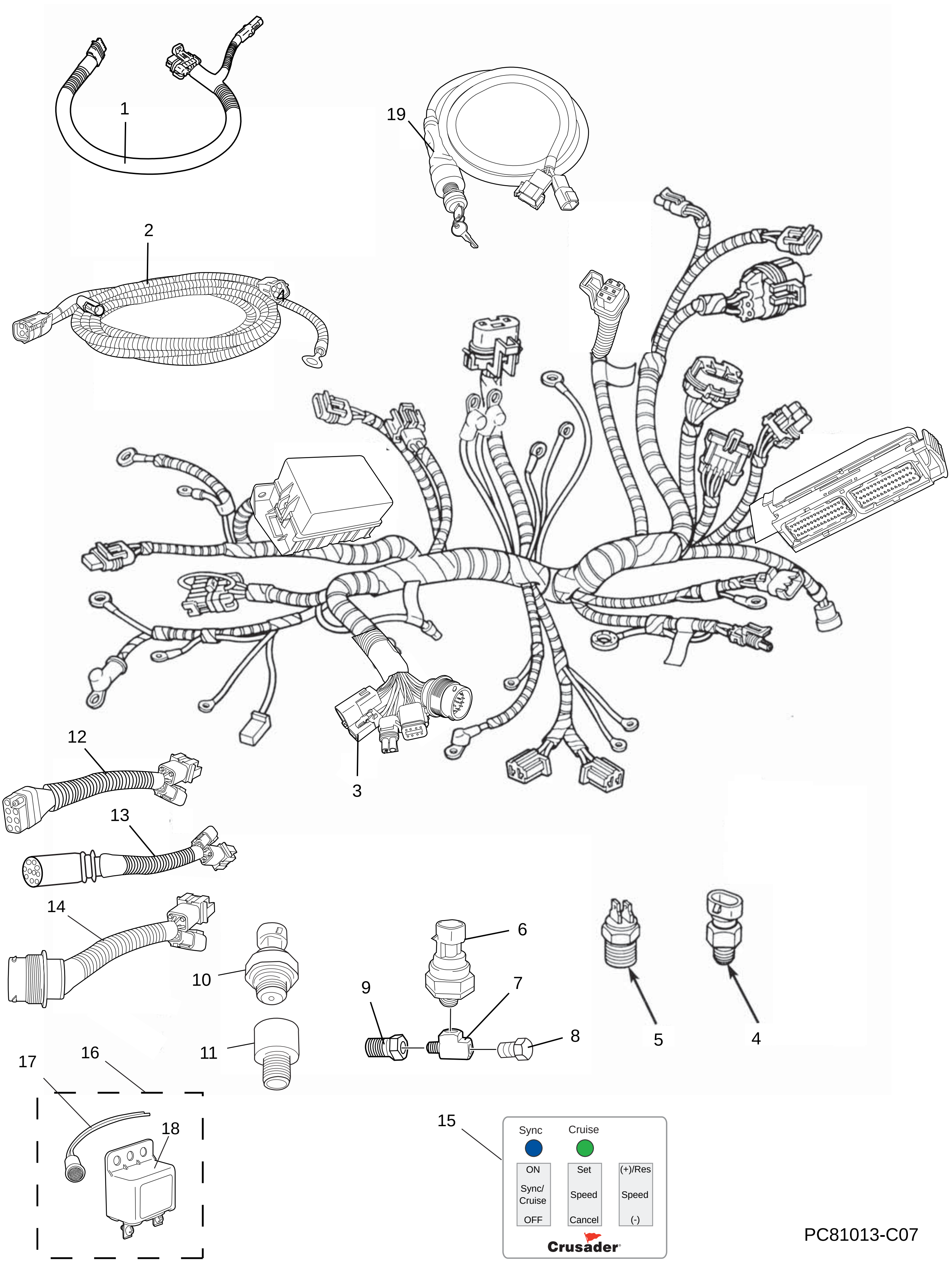
## RAW WATER COOLING PUMP - FIGURE 17



## RAW WATER COOLING PUMP - FIGURE 17

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | R057035 | 1 | **Housing,** raw water pump | |
| 2 | R175056 | 1 | **Bolt,** raw water pump cam | |
| 3 | R047254 | 1 | **O-ring,** raw water pump cam | |
| 4 | R161018 | 1 | **Cam,** raw water pump | |
| 5 | R047242 | 1 | **O-ring,** bearing housing attaching | |
| 6 | R047243 | 3 | **O-ring,** bearing housing attaching bolt | |
| 7 | TBD | 3 | **Lockwasher,** bearing housing attaching bolt | |
| 8 | TBD | 3 | **Bolt,** bearing housing attaching | |
| 9 | RA134071 | 1 | **Bearing Housing Assembly** | |
| 10 | RP061022 | 1 | **Impeller Kit,** (includes O-rings and impeller) | |
| 11 | RA057035 | 1 | **Raw Water Pump Assembly** | |
| 12 | RS3554 | 1 | **Plug**, brass 1/8 NPT | |
| NI | RF057026/35 | AR | **Raw Water Pump Retrofit Kit** (retrofits this pump system on to a 2004 MY or prior engine) | |

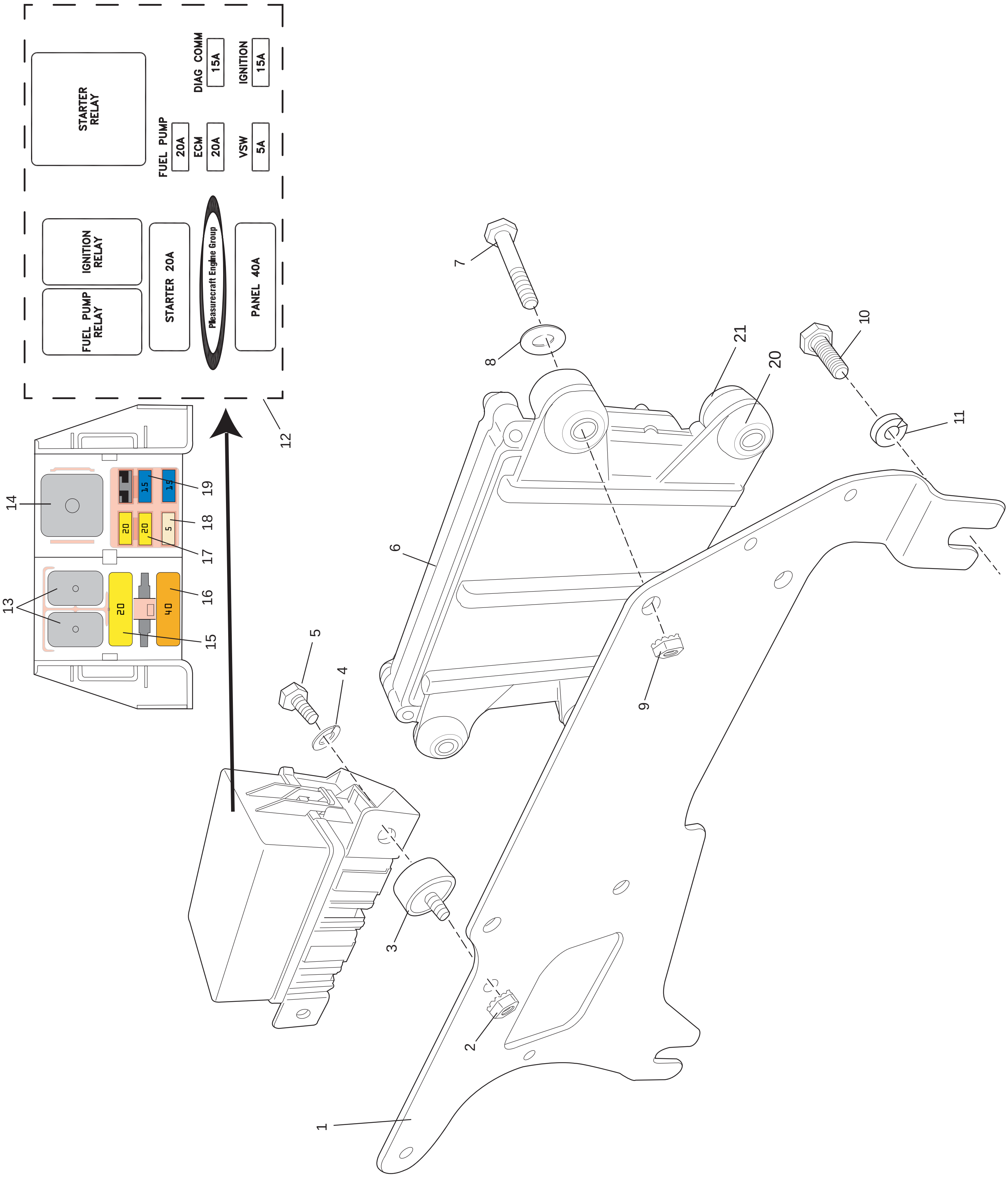
WIRING HARNESS ASSEMBLIES and SENDERS - FIGURE 18



# WIRING HARNESS ASSEMBLIES and SENDERS - FIGURE 18

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | R121086A | 1 | **Harness**, TCP-to-TAC | 07-811V-01 |
| 2 | RA121072C | AR | **Harness**, slave 6-pin connector (twin applications only) | |
| 3 | RA121089 | 1 | **Engine Wiring Harness Assembly (MY 2007)** | |
| 3 | RA121084A | 1 | **Engine Wiring Harness Assembly** (MY 2006-07) (16-Pin Boat Harness Connector) | 07-811V-01 |
| 4 | R020019 | 1 | **Sensor**, engine coolant temperature (ECT) | |
| 5 | R020037 | 1 | **Switch**, transmission alarm | |
| 6 | R020049 | 1 | **Sender**, oil pressure | |
| 7 | R024145 | 1 | **Tee**, sender attaching | |
| 8 | RS3554 | 1 | **Plug**, oil pressure sensor tee | |
| 9 | RS3677 | 1 | **Adapter**, sender attaching tee | |
| 10 | R020048 | 1 | **Sensor**, CAN BUS oil pressure | 07-811V-01 |
| 11 | R024223 | 1 | **Adapter**, CAN BUS oil pressure sensor | 07-811V-01 |
| 12 | RA121094 | AR | **Harness**, Adapter to 8-pin (female) boat harness | |
| NI | RA121094A | AR | **Harness**, Adapter to 8-pin (male) boat harness | |
| 13 | RA121093 | AR | **Harness**, Adapter to 10-pin boat harness | |
| NI | RA121093A | AR | **Harness**, Adapter to 10-pin boat harness, w/VDO sensor leads | |
| 14 | RA121098 | AR | **Harness**, Adapter to 14-pin boat harness | |
| 15 | RA152007 | AR | **Panel**, switch (Sync/Cruise, Speed Control) | |
| NI | RF152007 | AR | **Kit**, Sync/Cruise, Speed Control (includes Panel + 25 ft harness) | |
| 16 | RK179008 | AR | **Kit**, Check Engine Lamp | |
| 17 | R179008 | AR | **Lamp**, Check Engine | |
| 18 | 20640 | AR | **Buzzer**, Engine Warning | |
| NI | RA121092 | AR | **Harness**, Engine to Dash, Un-Terminated (25 foot) | |
| NI | RA121092A | AR | **Harness**, Engine to Dash, Un-Terminated (45 foot) | |
| NI | RA121092B | AR | **Harness**, Engine to Dash, Terminated, 8-Pin (Female) (25 foot) | |
| NI | RA121092C | AR | **Harness**, Engine to Dash, Un-Term., w/VDO sensor leads(25 ft) | |
| NI | RA121091 | AR | **Harness**, Speed Control, Engine to Panel (25 foot) | |
| NI | RA121091A | AR | **Harness**, Speed Control, Engine to Panel (45 foot) | |
| NI | RA121096-20 | AR | **Harness**, Speed Control, Engine to Junction (20 foot) | |
| NI | RA121096-25 | AR | **Harness**, Speed Control, Engine to Junction (25 foot) | |
| NI | RA121096-30 | AR | **Harness**, Speed Control, Engine to Junction (30 foot) | |
| NI | RA121096-35 | AR | **Harness**, Speed Control, Engine to Junction (35 foot) | |
| NI | RA121097-07 | AR | **Harness**, Speed Control, Junction to Panel (7 foot) | |
| NI | RA121097-15 | AR | **Harness**, Speed Control, Junction to Panel (15 foot) | |
| NI | RA121097-21 | AR | **Harness**, Speed Control, Junction to Panel (21 foot) | |
| NI | RA121062D | 1 | **Harness**, fuel pump extension | 07-811V-01 |
| 19 | RT0091 | AR | **Harness**, Test w/Key Switch | |

# ECM and RELAYS - FIGURE 19

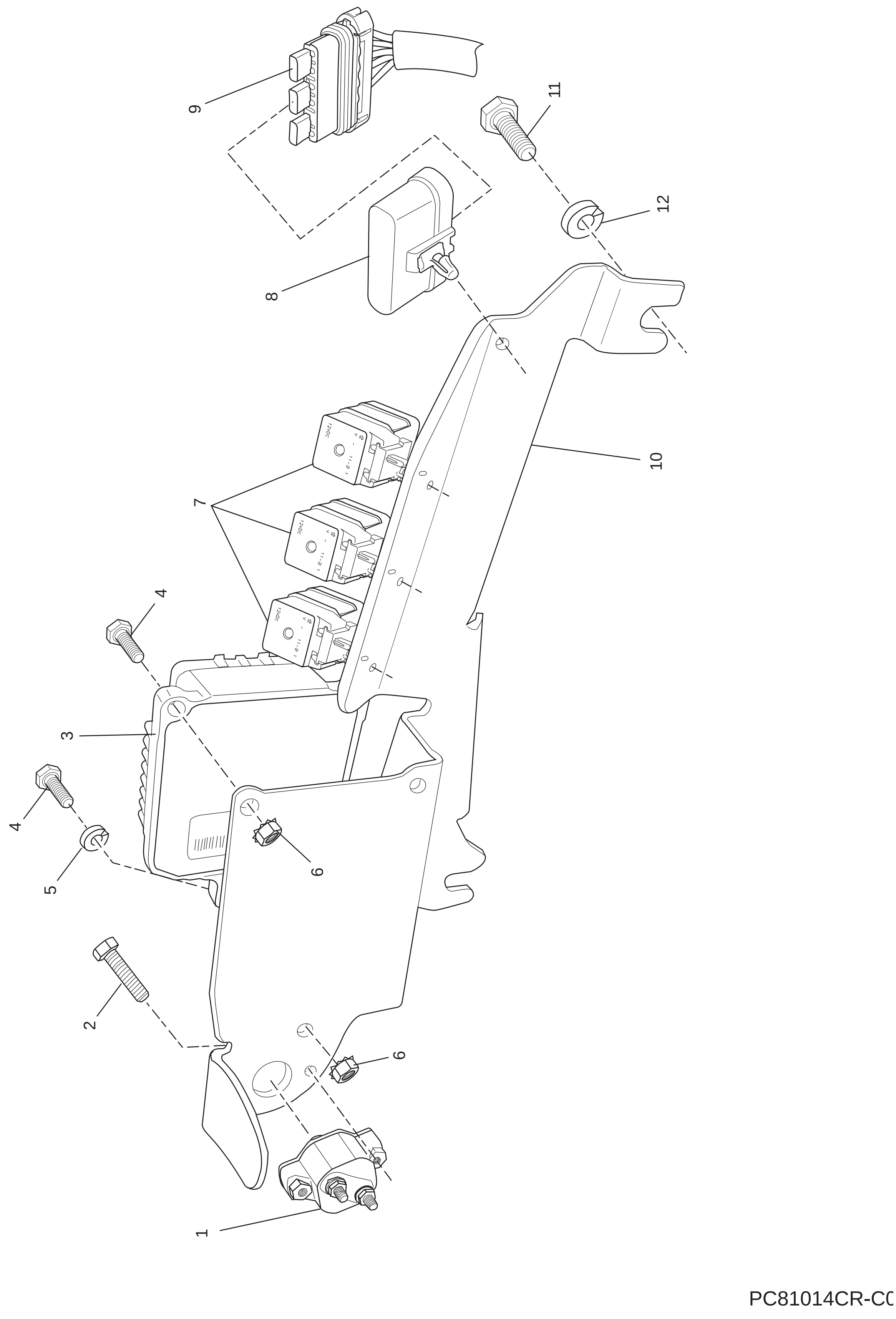



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# ECM and RELAYS - FIGURE 19

| ITEM | PART NO. | QTY | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | R090310 | 1 | **Bracket,** ECM/Relay | |
| 2 | RS1078 | 2 | **Nut**, KEPS, Fuse Block attaching | |
| 3 | R094044 | 2 | **Isolator**, fuse block mounting | |
| 4 | RS2178 | 2 | **Lockwasher**, Isolator attaching | |
| 5 | RS0251 | 2 | **Bolt**, Isolator attaching | |
| 6 | R116023 -5X01 | 1 | **Electronic Control Module (**FCC, 8.1 - STD, SS**)** | 22-810-XX, 22-810V-01, 23-810-XX, 23-810V-XX, 25-810-01, 26-810-01, 26-810V-01, 31-810-01, 50-810-05 |
| 6 | R116023 -5X02 | 1 | **Electronic Control Module** (FCC, 8.1 - STD, DS) | 24-810V-XX |
| 6 | R116023 -5X03 | 1 | **Electronic Control Module** (Rtnlss, 8.1 - STD, SS) | 20-810-01, 20-810-02, 20-810V-01, 25-810-02, 50-810-01 thru -04, 50-810V-XX |
| 6 | R116023 -5X04 | 1 | **Electronic Control Module** (Rtnlss, 8.1 - STD, DS) | |
| 6 | R116023 -5Z01 | 1 | **Electronic Control Module (**FCC, 8.1 - HO, SS**)** | 23-811-XX, 25-811-01, 31-811-01 |
| 6 | R116023 -5Z02 | 1 | **Electronic Control Module** (FCC, 8.1 - HO, DS) | 32-811-01 |
| 6 | R116023 -5Z03 | 1 | **Electronic Control Module** (Rtnlss, 8.1 - HO, SS) | 25-811-02, 30-811-01, 50-811-XX, 50-811V-XX |
| 6 | R116023 -5Z04 | 1 | **Electronic Control Module** (Rtnlss, 8.1 - HO, DS) | |
| 7 | 98223035 | 4 | **Bolt**, ECM attaching | |
| 8 | RS2672 | 4 | **Flat washer**, ECM attaching | |
| 9 | 97220060 | 4 | **Nut**, KEPS, ECM attaching | |
| 10 | 98443025 | 2 | **Bolt,** ECM/Relay bracket attaching | |
| 11 | 93940000 | 2 | **Lockwasher,** ECM/Relay bracket attaching | |
| 12 | R143186 | 1 | **Decal**, main fuse box | |
| 13 | R130015 | 2 | **Relay**, Fuel Pump and Ignition | |
| 14 | R130016 | 1 | **Relay**, Starter | |
| 15 | R153019C | 1 | **Fuse**, Starter, 20 Amp | |
| 16 | R153019F | 1 | **Fuse**, Panel, 40 Amp | |
| 17 | R153017B | 2 | **Fuses**, 20 amp | |
| 18 | R153017A | 2 | **Fuses**, 15 amp | |
| 19 | R153017C | 1 | **Fuse**, 5 amp | |
| 20 | R094046 | 4 | **Isolator**, ECM Mounting | |
| 21 | R176025 | 4 | **Sleeve**, ECM Isolator Retaining | |

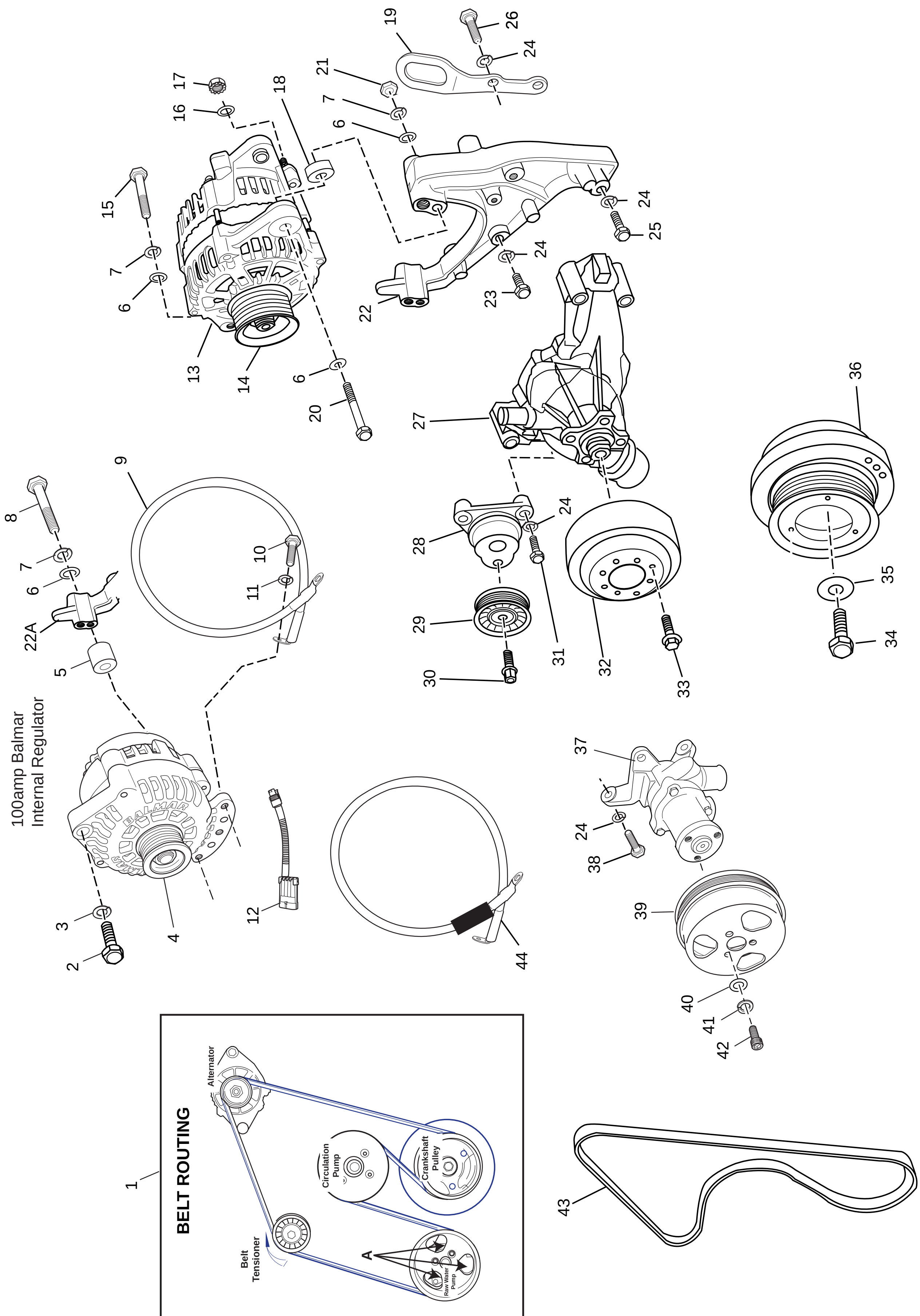
# MODEL 07-811V-01 ECM and RELAYS - FIGURE 20



## MODEL 07-811V-01 ECM and RELAYS - FIGURE 20

| ITEM | PART NO. | QTY | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | R153006C | 1 | **Circuit Breaker (60 amp)** | 07-811V-01 |
| NI | R143176 | 1 | **Decal,** Fuse Block | 07-811V-01 |
| NI | R143177 | 1 | **Decal,** Main Circuit Breaker | 07-811V-01 |
| 2 | RS5084 | 2 | **Bolt,** circuit breaker attaching | 07-811V-01 |
| 3 | R116021X | 1 | **Electronic Control Module (ECM)** cksum - 48445 (BD3D)<br>16-Pin Boat Harness Connector (HO MY 2006-'07) (single engine) | 07-811V-01 |
| 3 | R116021X-07T | 1 | **Electronic Control Module (ECM)** cksum - 47980 (BB6C)<br>16-Pin Boat Harness Connector (HO MY 2006-'07) (twin engine) | 07-811V-01 |
| 4 | RS0254 | 3 | **Bolt,** ECM attaching | 07-811V-01 |
| 5 | 92100000 | 1 | **Washer,** ECM attaching | 07-811V-01 |
| 6 | RS1078 | 3 | **Nut**, KEPS, ECM mounting | 07-811V-01 |
| 7 | R130011A | 3 | **Relay,** fuel pump, ignition, starter | 07-811V-01 |
| 8 | R126014 | 1 | **Cover,** fuse holder | 07-811V-01 |
| 9 | R153017B | 3 | **Fuses,** 20 amp | 07-811V-01 |
| 10 | R090310 | 1 | **Bracket,** ECM/Relay | 07-811V-01 |
| 11 | 98443025 | 2 | **Bolt,** ECM/Relay bracket attaching | 07-811V-01 |
| 12 | 93940000 | 2 | **Lockwasher,** ECM/Relay bracket attaching | 07-811V-01 |

# ACCESSORY DRIVE SYSTEM COMPONENTS - FIGURE 21

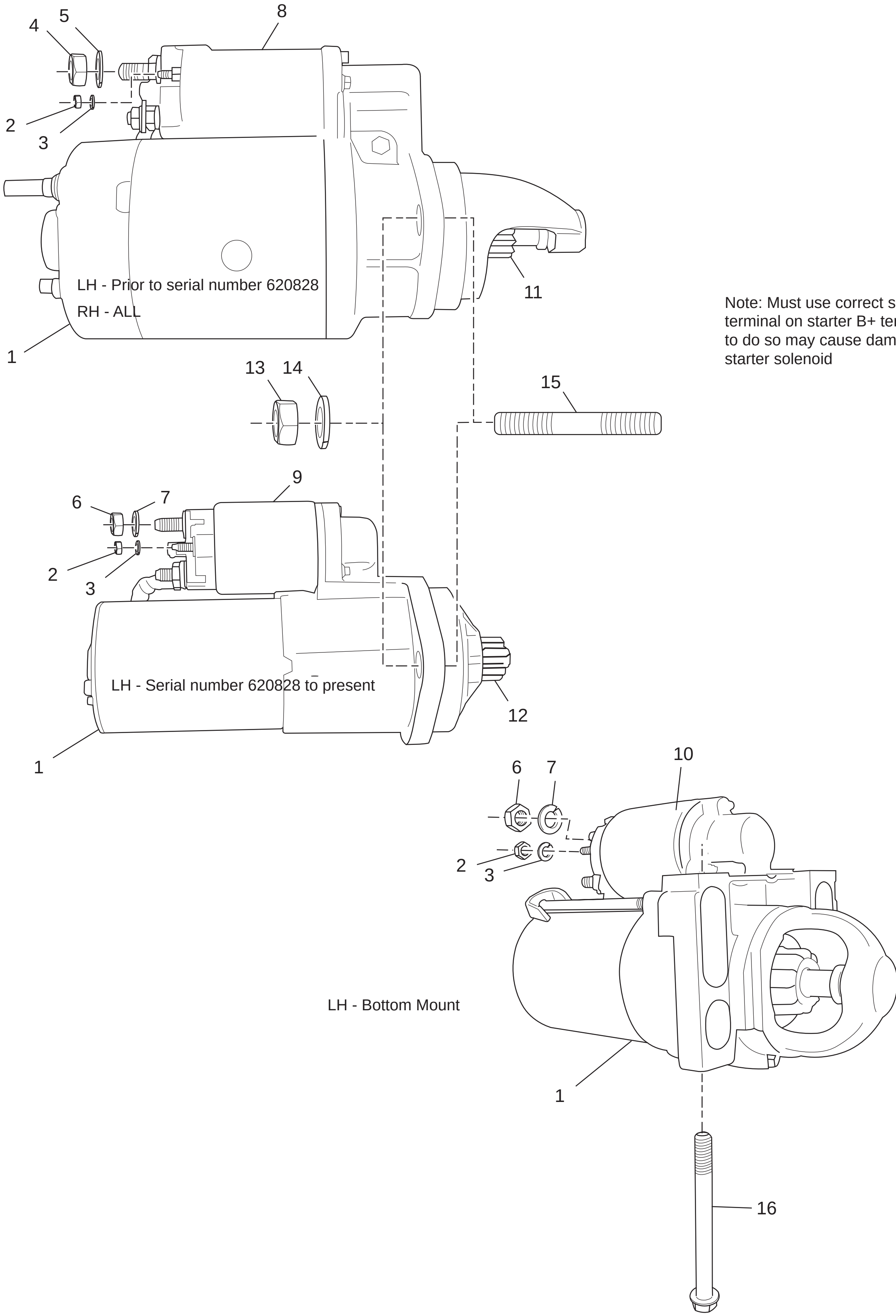



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## ACCESSORY DRIVE SYSTEM COMPONENTS - FIGURE 21

| ITEM | PART NO. | QTY. | DESCRIPTION | MODEL ID |
|---|---|---|---|---|
| 1 | R143136A | 1 | **Decal**, belt routing | |
| 2 | 90505200 | 1 | **Bolt**, mounting (100 amp alternator only) | 22-810-01, 22-810-02, 22-810-03, 22-810V-01 |
| 3 | 93500000 | 1 | **Lockwasher**, mounting (100 amp alternator only) | 22-810-01, 22-810-02, 22-810-03, 22-810V-01 |
| 4 | RA097010 | 1 | **Alternator Assembly**, (100 amp) | 22-810-01, 22-810-02, 22-810-03, 22-810V-01 |
| 5 | R062082 | 1 | **Spacer**, mounting (100 amp alternator only) | 22-810-01, 22-810-02, 22-810-03, 22-810V-01 |
| 6 | 92930000 | 4 | **Washer**, alternator attaching bolt | |
| 7 | 93930000 | 3 | **Lockwasher**, alternator attaching bolt | |
| 8 | 98333075 | 1 | **Bolt**, mounting (100 amp alternator only) | 22-810-01, 22-810-02, 22-810-03, 22-810V-01 |
| 9 | R101015 | 1 | **Cable**, ground (70 amp) | |
| 9 | R101016 | 1 | **Cable**, ground (100 amp) | 22-810-01, 22-810-02, 22-810-03, 22-810V-01 |
| 10 | 98333025 | 1 | **Bolt**, cable attaching (100 amp alternator only) | 22-810-01, 22-810-02, 22-810-03, 22-810V-01 |
| 11 | RS2179 | 1 | **Lockwasher**, cable attaching (100 amp alternator only) | 22-810-01, 22-810-02, 22-810-03, 22-810V-01 |
| 12 | R121081 | 1 | **Harness**, jumper, 100 amp alternator | |
| 13 | RA097007 | 1 | **Alternator Assembly**, (70 amp) | |
| 14 | R065043 | 1 | **Pulley**, alternator, 70A | |
| 15 | 90205300 | 1 | **Bolt**, alternator attaching (70 amp) | |
| 16 | RS2672 | 2 | **Washer**, cable attaching (70 amp) | |
| 17 | 97220060 | 2 | **Nut**, KEPS, cable attaching (70 amp) | |
| 18 | R062081 | 1 | **Spacer**, alternator mounting (70 amp) | |
| 19 | R042009 | 1 | **Bracket**, lift | |
| 20 | 98333110 | 1 | **Bolt**, alternator attaching (70 amp) | |
| 21 | 97330000 | 1 | **Nut**, alternator mounting | |
| 22 | R090225 | 1 | **Bracket**, alternator mounting (70 amp) | |
| 22A | R090225A | 1 | **Bracket**, alternator mounting (100 amp) | 22-810-01, 22-810-02, 22-810-03, 22-810V-01 |
| 23 | 98449040 | 1 | **Bolt**, alternator bracket attaching (short) | |
| 24 | 93940000 | 9 | **Lockwasher**, bracket attaching | |
| 25 | 98449055 | 1 | **Bolt**, alternator bracket attaching bolt (long) | |
| 26 | 98443025 | 2 | **Bolt**, lift bracket attaching | |
| 27 | RA057030 | 1 | **Water Pump Assembly** | |
| 28 | RA068001 | 1 | **Tensioner**, belt | |
| 29 | R065057 | 1 | **Pulley**, belt tensioner | |
| 30 | TBD | 1 | **Bolt**, tensioner pulley attaching | |
| 31 | 98449050 | 2 | **Bolt**,tensioner mounting | |
| 32 | R065044 | 1 | **Pulley**, circulation pump | |
| 33 | TBD | 4 | **Bolt,** circ. pump pulley attaching | |
| 34 | TBD | 1 | **Bolt**, crankshaft balancer | |
| 35 | TBD | 1 | **Washer**, crankshaft balancer | |
| 36 | R064015 | 1 | **Balancer**, crankshaft | |
| 37 | RA057035 | 1 | **Raw Water Pump Assembly** | |
| 38 | 98443030 | 3 | **Bolt**, raw water pump mounting | |
| 39 | R065056 | 1 | **Pulley**, raw water pump | |
| 40 | 92934000 | 3 | **Washer**, pulley mounting | |
| 41 | 93934000 | 3 | **Lockwasher**, pulley mounting | |
| 42 | 99335016 | 3 | **Bolt,** pulley pulley attaching | |
| 43 | R066024A | 1 | **Belt**, accessory drive | |
| 44 | R153018D | 1 | **Cable**, 100A Fuse Link, Alternator to Starter | |

## STARTER ASSEMBLY COMPONENTS - FIGURE 22

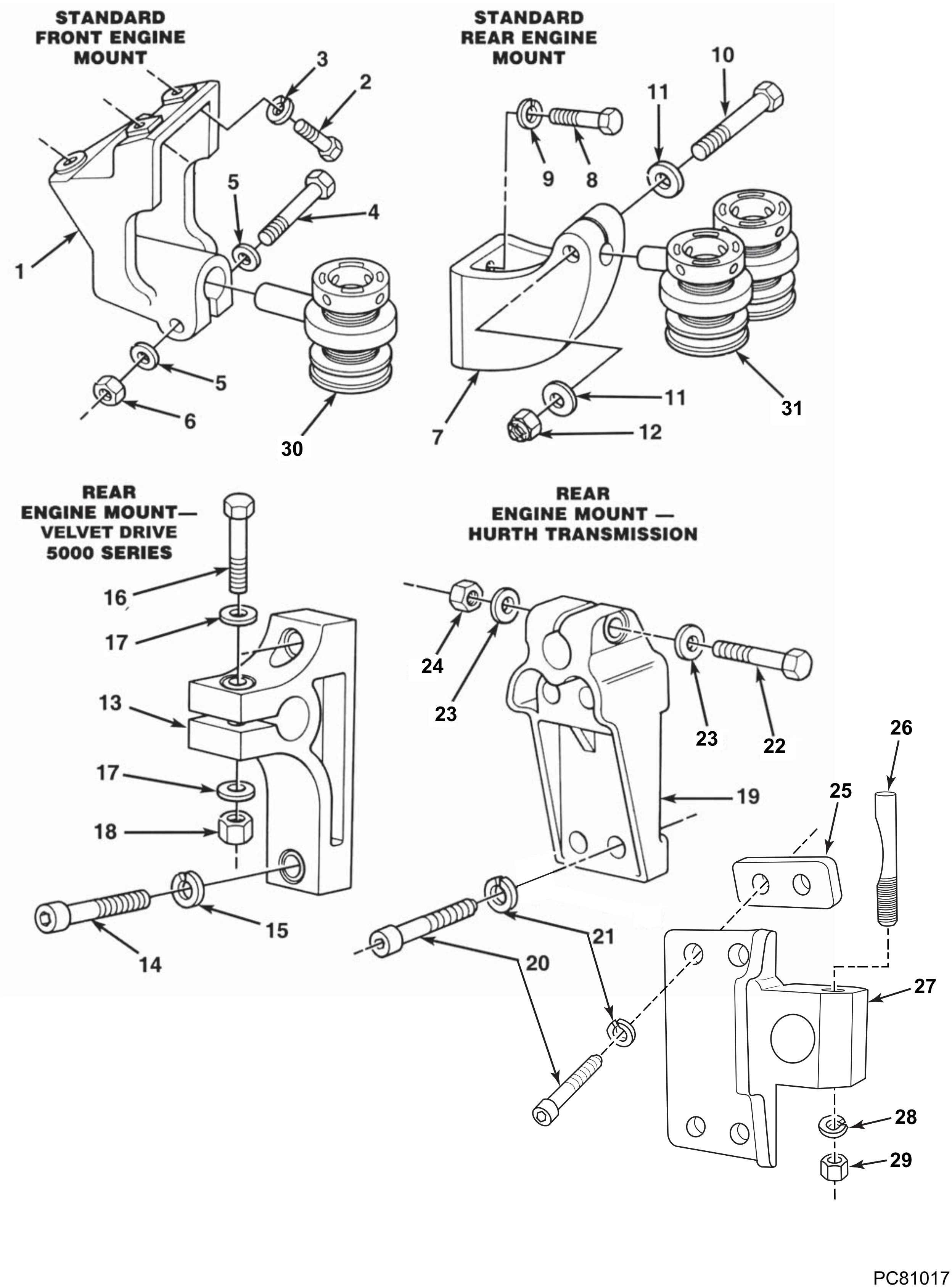



Note: Must use correct size ring terminal on starter B+ terminal. Failure to do so may cause damage to the starter solenoid

## STARTER ASSEMBLY COMPONENTS - FIGURE 22

| ITEM | PART NO. | QTY. | DESCRIPTION | QUANTITY |
|---|---|---|---|---|
| 1 | RA122009 | 1 | **Starter Motor Assembly** (LH rotation) | |
| 1 | RA122015 | 1 | **Starter Motor Assembly** (LH, bottom mount) | 25-811-02, 25-810-02 |
| 2 | RS7036 | 1 | **Nut**, solenoid terminal | |
| 3 | 93003000 | 1 | **Lockwasher**, solenoid terminal | |
| 4 | RS7019 | 1 | **Nut**, solenoid terminal | |
| 5 | RS7081 | 1 | **Lockwasher**, solenoid terminal | |
| 6 | RS7018 | 1 | **Nut**, solenoid terminal | |
| 7 | RS7080 | 1 | **Lockwasher**, solenoid terminal | |
| 8 | RU0050 | 1 | **Solenoid Assembly**, starter | |
| 9 | RU0050B | 1 | **Solenoid Assembly**, starter | |
| 10 | RU0050A | 1 | **Solenoid**, starter (bottom mount) | 25-811-02, 25-810-02 |
| 11 | RU0051 | 1 | **Drive Assembly**, clutch (LH) | |
| 12 | TBD | 1 | **Drive**, starter | |
| 13 | RS1029 | 2 | **Nut**, starter mounting | |
| 14 | RS2181 | 2 | **Lockwasher**, starter mounting | |
| 15 | R031018 | 2 | **Stud**, starter mounting | |
| 16 | R009203 | 2 | **Bolt**, starter mounting | 25-811-02, 25-810-02 |

ENGINE and TRANSMISSION MOUNTS - FIGURE 23

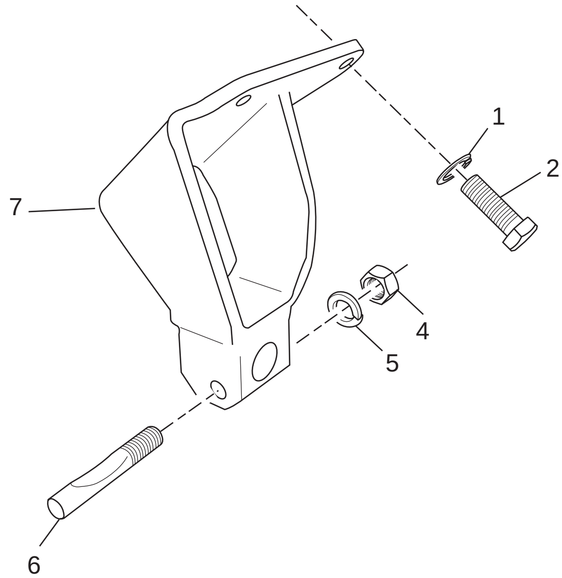


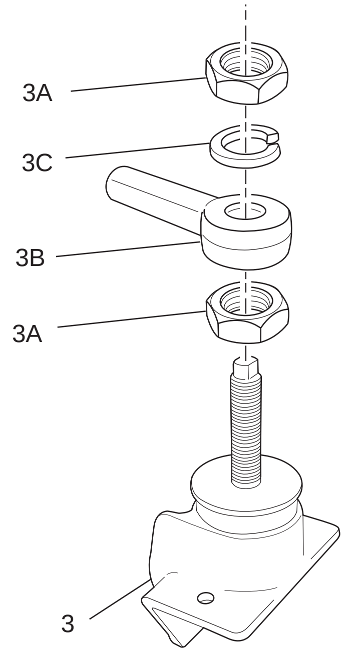
## ENGINE and TRANSMISSION MOUNTS - FIGURE 23

| ITEM | PART NO. | QTY. | DESCRIPTION | QUANTITY |
|---|---|---|---|---|
| | | | ****Standard Front Engine Mount**** | |
| 1 | 97938 | 2 | **Bracket**, engine mounting (front) | |
| 2 | 99443030 | 4 | **Bolt**, socket head (30 mm) | |
| 2 | 98446030 | 2 | **Bolt**, hex head (30 mm) | |
| 3 | 93940000 | 6 | **Lockwasher**, bracket mounting bolt | |
| 4 | 90318225 | 2 | **Bolt**, trunnion shaft (2 1/4”) | |
| 5 | 92300000 | 4 | **Washer**, trunnion bolt | |
| 6 | 95310300 | 2 | **Nut**, trunnion bolt - locking | |
| | | | ****Standard Rear Engine Mount**** | |
| 7 | 97917 | 2 | **Bracket**, engine mounting (Rear) | |
| 8 | RS0328 | 4 | **Bolt**, bracket to transmission (1 1/4”) | |
| 9 | RS2181 | 4 | **Lockwasher**, bracket mounting bolt | |
| 10 | 90318325 | 2 | **Bolt**, trunnion shaft (3 1/4”) | |
| 11 | 92300000 | 4 | **Washer**, trunnion bolt | |
| 12 | 95310300 | 2 | **Nut**, trunnion bolt - locking | |
| | | | ****Rear Engine Mount - Velvet Drive 5000 Series**** | |
| 13 | 98224 | 1 | **Bracket**, transmission mounting (Starboard) | |
| 13 | 98225 | 1 | **Bracket**, transmission mounting (Port) | |
| 14 | RS6336 | 4 | **Bolt**, bracket to transmission (12 mm x 60 mm) | |
| 15 | RS7071 | 4 | **Lockwasher** (12 mm) | |
| 16 | 90318325 | 2 | **Bolt**, trunnion shaft (3 1/4”) | |
| 17 | 92300000 | 4 | **Washer**, trunnion bolt | |
| 18 | 95310300 | 2 | **Nut**, trunnion bolt - locking | |
| | | | ****Rear Engine Mount - Hurth Transmission**** | |
| 19 | 98077 | 2 | **Bracket**, engine mounting (rear) | |
| 20 | RS6331 | 4 | **Bolt**, bracket to transmission (12 mm x 35 mm) | |
| 20 | RS6336 | 4 | **Bolt**, bracket to transmission (12 mm x 60 mm) | |
| 21 | RS7071 | 8 | **Lockwasher** (12 mm) | |
| 22 | 90318325 | 2 | **Bolt**, trunnion shaft (3 1/4”) | |
| 23 | 92300000 | 4 | **Washer**, trunnion bolt | |
| 24 | 95310300 | 2 | **Nut**, trunnion bolt - locking | |
| 25 | R109049 | 2 | **Spacer**, bracket to transmission | |
| 26 | R095020 | 2 | **Bolt**, trunnion shaft | |
| 27 | R090217 | 1 | **Bracket**, engine mounting (port) | |
| 27 | R090218 | 1 | **Bracket**, engine mounting (starboard) | |
| 28 | RS2181 | 2 | **Lockwasher**, trunnion bolt | |
| 29 | RS1529 | 2 | **Nut**, trunnion bolt - locking | |
| | | | ****Mount Supports**** | |
| 30 | 97926 | 2 | **Mount**, engine support (single front) | |
| 31 | 97905 | 2 | **Mount**, engine support (dual rear) | |

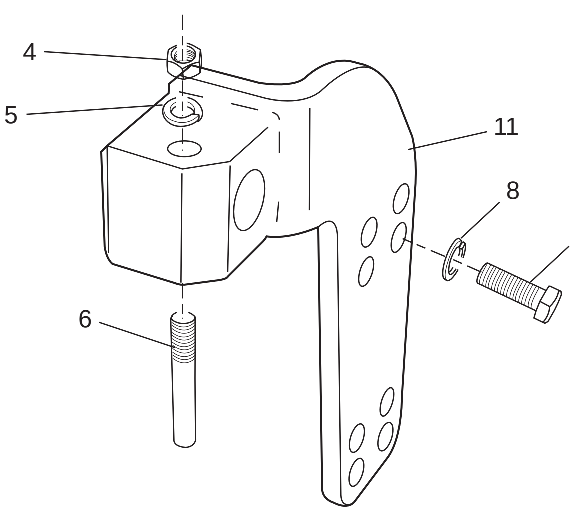
MODEL 07-811V-01 ENGINE and TRANSMISSION MOUNTS - FIGURE 24

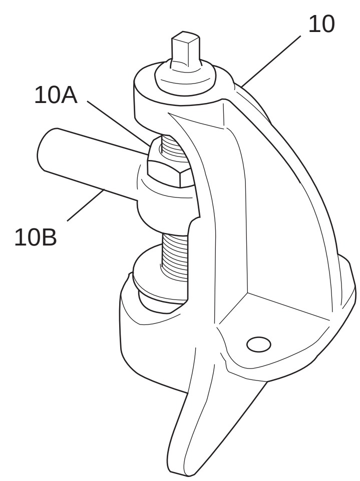
**OPTIONAL FRONT MOUNT**




**OPTIONAL REAR MOUNT -**
**HURTH GEAR**

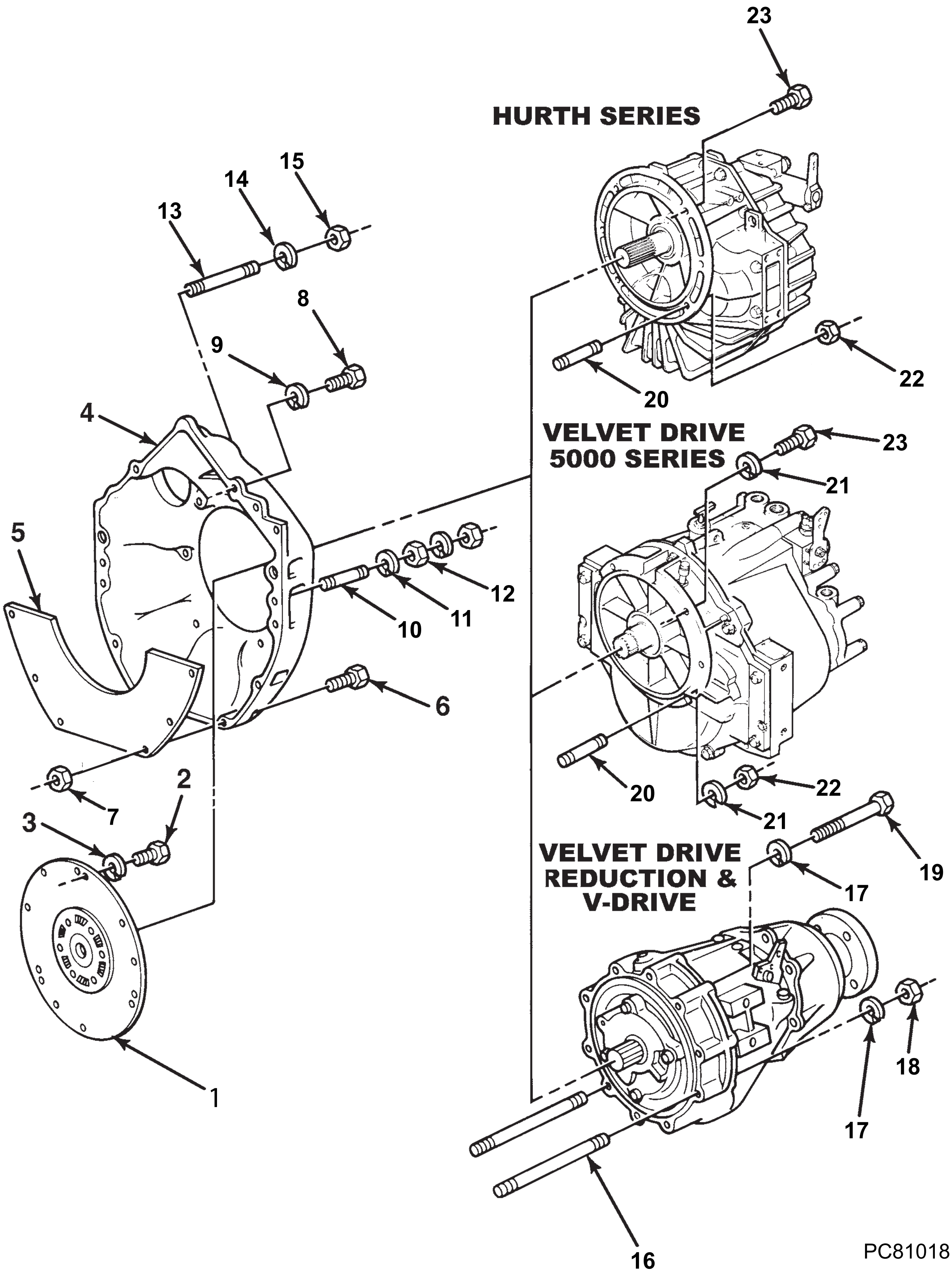


## MODEL 07-811V-01 ENGINE and TRANSMISSION MOUNTS - FIGURE 24

| ITEM | PART NO. | QTY. | DESCRIPTION | QUANTITY |
|---|---|---|---|---|
| 1 | RS2180 | 6 | **Lockwasher**, bracket mounting bolt | 07-811V-01 |
| 2 | RS0305 | 4 | **Bolt**, socket head | 07-811V-01 |
| 3 | RC091001 | 2 | **Trunnion Assembly** | 07-811V-01 |
| 3A | RS1075 | 4 | **Nut**, adjustment and lock | 07-811V-01 |
| 3B | R091001 | 2 | **Trunnion, long** | 07-811V-01 |
| 3C | RS2186 | 2 | **Lockwasher**, adjusting nut | 07-811V-01 |
| 4 | RS1529 | 2 | **Nut**, trunnion bolt - locking | 07-811V-01 |
| 5 | RS2181 | 2 | **Lockwasher**, trunnion bolt | 07-811V-01 |
| 6 | R095020 | 2 | **Bolt**, trunnion shaft | 07-811V-01 |
| 7 | R090330 | 1 | **Bracket**, engine mounting (front, port) | 07-811V-01 |
| 7 | R090331 | 1 | **Bracket**, engine mounting (front, starboard) | 07-811V-01 |
| 8 | RS7071 | 8 | **Lockwasher** (12 mm) | 07-811V-01 |
| 9 | RS6336 | 4 | **Bolt**, bracket to transmission (12 mm x 60 mm) | 07-811V-01 |
| 10 | RA092011 | 2 | **Trunnion Assembly**, tall | 07-811V-01 |
| 10A | R091003 | 2 | **Trunnion**, 2.5” | 07-811V-01 |
| 10B | RS1075 | 2 | **Nut**, adjustment and lock | 07-811V-01 |
| 11 | R090328 | 1 | **Bracket**, engine mounting (rear - port) | 07-811V-01 |
| 11 | R090329 | 1 | **Bracket**, engine mounting (rear - starboard) | 07-811V-01 |

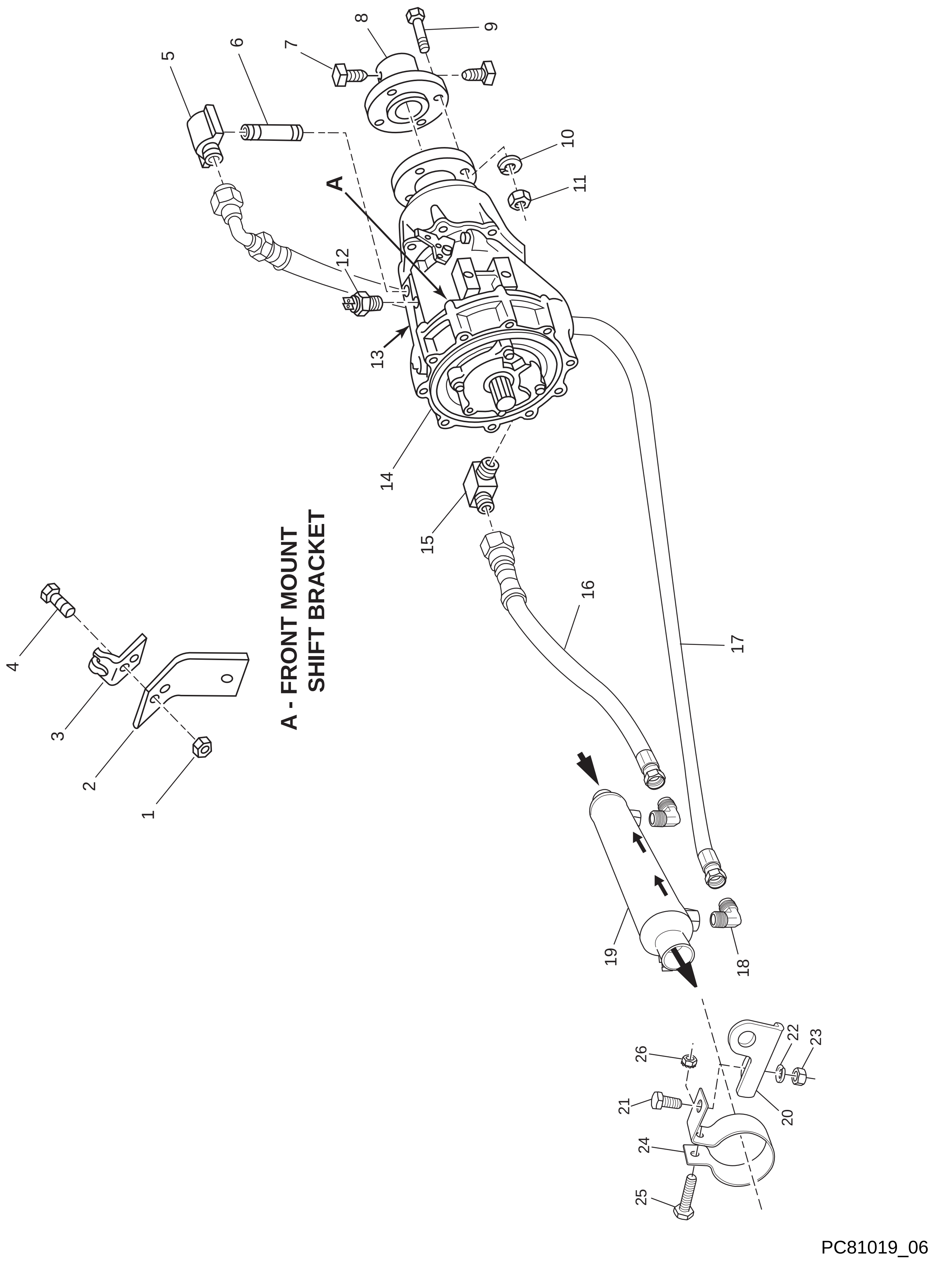
BELL HOUSING ASSEMBLY - FIGURE 25



## BELL HOUSING ASSEMBLY - FIGURE 25

| ITEM | PART NO. | QTY. | DESCRIPTION | QUANTITY |
|---|---|---|---|---|
| 1 | R140018 | 1 | **Drive Damper Assembly**, (Hurth) | |
| 1 | 98511 | 1 | **Drive Damper Assembly**, (Standard Velvet Drive) | |
| 2 | 98446030 | 6 | **Bolt**, damper to flywheel (1”) | |
| 3 | 93940000 | 6 | **Lockwasher**, damper bolt | |
| 4 | R142014 | 1 | **Bellhousing**, flywheel | |
| 5 | R019008 | 1 | **Cover**, bellhousing (use w/top mount starter) | |
| 5 | R019008A | 1 | **Cover**, bellhousing (use w/bottom mount starter) | 25-811-02, 25-810-02 |
| NI | R019010 | 1 | **Cover**, top mount starter (used w/R019008A) | 25-811-02, 25-810-02 |
| NI | RS0327 | 2 | **Bolt**, dust cover attaching | 25-811-02, 25-810-02 |
| NI | RS2181 | 2 | **Lockwasher**, dust cover attaching | 25-811-02, 25-810-02 |
| 6 | RS0256 | 5 | **Bolt**, cover to bellhousing (1”) | |
| 6 | 90105125 | 1 | **Bolt**, cover to bellhousing (1 1/4”) | |
| 7 | RS1078 | 6 | **Nut**, cover bolt | |
| 8 | 98443050 | 2 | **Bolt**, bellhousing to block | |
| 8 | 99443030 | 1 | **Bolt**, SHCS (behind starter) | |
| 9 | 93940000 | 2 | **Lockwasher**, bellhousing bolt | |
| 10 | R031034 | 2 | **Stud**, bellhousing mounting | |
| 11 | 93940000 | 4 | **Lockwasher**, mounting stud | |
| 12 | 97440000 | 4 | **Nut**, mounting stud | |
| 13 | R031018 | 2 | **Stud**, starter mounting (1 5/8”) | |
| 14 | RS2181 | 2 | **Lockwasher**, starter mounting stud | |
| 15 | RS1029 | 2 | **Nut**, starter mounting stud | |
| | | | ****Velvet Drive Reduction & “V”-Drive**** | |
| 16 | 96541 | 2 | **Stud**, transmission mounting (4”) | |
| 17 | RS2181 | 6 | **Lockwasher**, transmission mounting | |
| 18 | RS1029 | 2 | **Nut**, transmission mounting stud | |
| 19 | RS0337 | 4 | **Bolt**, transmission mounting | |
| | | | ****Velvet Drive 5000 & Hurth Gears**** | |
| 20 | R031018 | 2 | **Stud**, transmission mounting (1 5/8”) | |
| 21 | RS2180 | 6 | **Lockwasher**, transmission mounting | |
| 22 | RS1029 | 2 | **Nut**, transmission mounting stud | |
| 23 | RS0329 | 4 | **Bolt**, transmission mounting | |

## TRANSMISSION AND RELATED COMPONENTS (VELVET DRIVE IN-LINE) - FIGURE 26

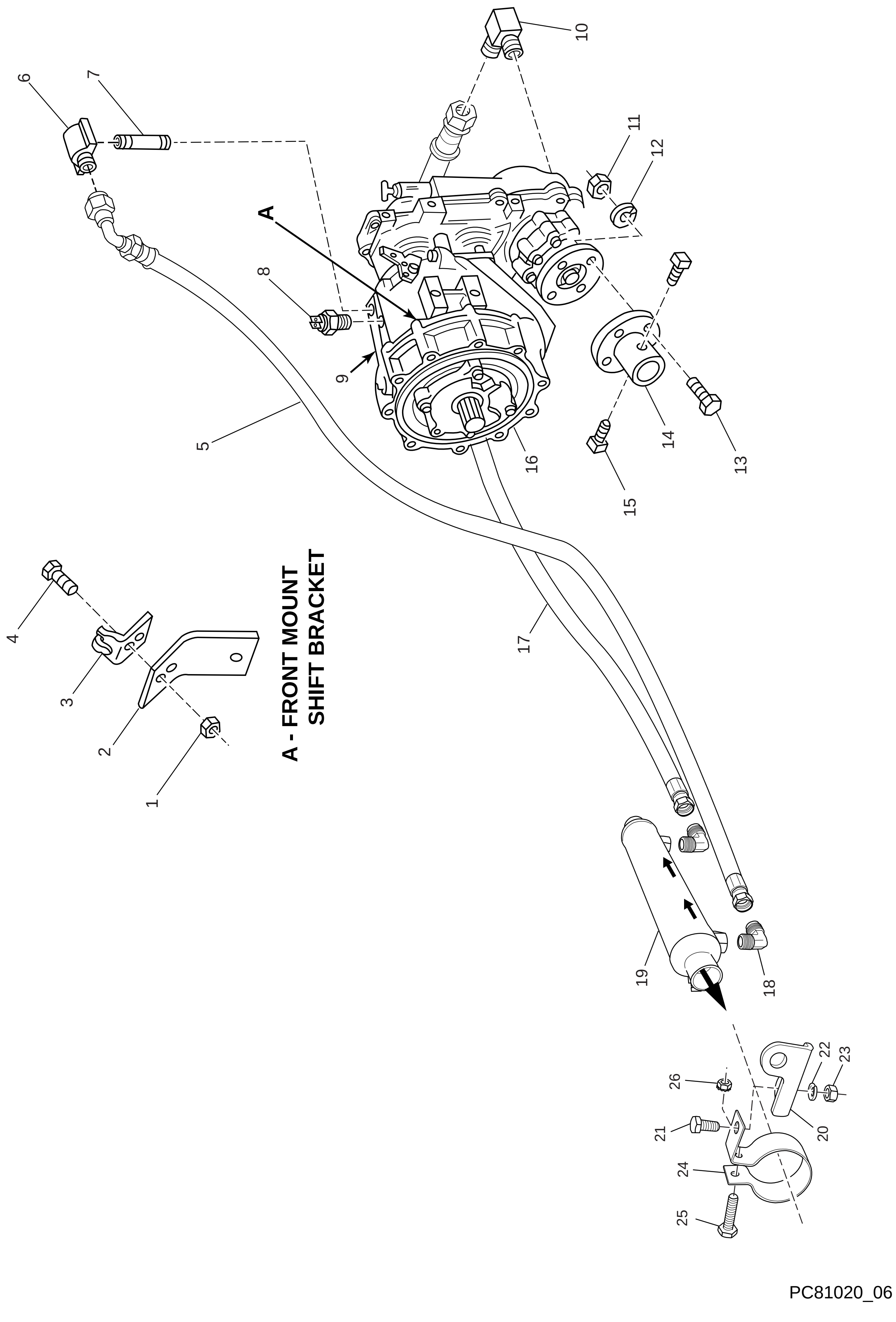



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# TRANSMISSION AND RELATED COMPONENTS (VELVET DRIVE IN-LINE) - FIGURE 26

| ITEM | PART NO. | QTY. | DESCRIPTION | QUANTITY |
|---|---|---|---|---|
| 1 | RS2055 | 2 | **Nut,** attaching bolt | |
| 2 | 96341 | 1 | **Shift Bracket** (front mount) | |
| 3 | R090086 | 1 | **Cable Clip**, single cable | |
| N.I. | 22232 | OPT | **Cable Clip**, dual cable clip (not shown) | |
| 4 | RS5122 | 2 | **Bolt,** clip attaching (1/2”) | |
| 5 | R024008 | 1 | **Elbow,** hose - transmission (90 degree) | |
| 6 | RS4674 | 1 | **Nipple,** pipe (3”) | |
| 7 | 2000090 | 2 | **Screw,** set - coupler | |
| 8 | R148001 | OPT | **Coupler,** prop shaft (1” shaft) | |
| 8 | R148002 | OPT | **Coupler,** prop shaft (1 1/8” shaft) | |
| 8 | R148003 | OPT | **Coupler,** prop shaft (1 1/4” shaft) | |
| 8 | R148004 | OPT | **Coupler,** prop shaft (1 3/8” shaft) | |
| 8 | R148005 | OPT | **Coupler,** prop shaft (1 1/2” shaft) | |
| 8 | R148007 | OPT | **Coupler,** prop shaft (1 3/4” shaft) | |
| 8 | R148008 | OPT | **Coupler,** prop shaft (2” shaft) | |
| 9 | 22136 | 4 | **Bolt,** coupling (1 1/2”) | |
| 10 | RS2181 | 4 | **Lockwasher,** coupling bolt | |
| 11 | RS1529 | 4 | **Nut,** coupling bolt | |
| 12 | R020037 | 1 | **Sender,** temperature alarm | |
| 13 | R153002 | 1 | **Switch Kit,** neutral start (not shown) | |
| 13A | 25542 | 1 | **Switch & O-Ring Assembly** (not shown) | |
| 14 | RA157003 | 1 | **Transmission** (1:1 Direct Drive) | |
| 14 | RA157004 | 1 | **Transmission** (1.52:1 Reduction) | |
| 14 | RA157004A | 1 | **Transmission** (1.88:1 Reduction) | |
| 14 | RA157004D | 1 | **Transmission** (2.57:1 Reduction) | |
| 14 | RA157004E | 1 | **Transmission** (2.91:1 Reduction) | |
| 15 | R024010 | 1 | **Elbow,** hose - transmission (90 degree) | |
| 16 | RA045007P | 1 | **Hose Assembly**, transmission to cooler (45”) | |
| 17 | RA045007T | 1 | **Hose Assembly**, transmission to cooler (46”) | |
| 18 | R024010 | 2 | **Fitting,** 90 degree | |
| 19 | R147006 | 1 | **Cooler Assembly**, transmission oil | |
| 20 | R090013A | 1 | **Bracket**, oil cooler attaching | |
| 21 | RS0302 | 1 | **Bolt,** oil cooler attaching | |
| 22 | RS2180 | 1 | **Lockwasher**, oil cooler attaching | |
| 23 | RS2058 | 1 | **Nut,** oil cooler attaching | |
| 24 | R090010 | 1 | **Clamp**, oil cooler mounting | |
| 25 | RS0256 | 1 | **Bolt**, oil cooler clamp | |
| 26 | RS1028 | 1 | **Nut,** oil cooler clamp | |

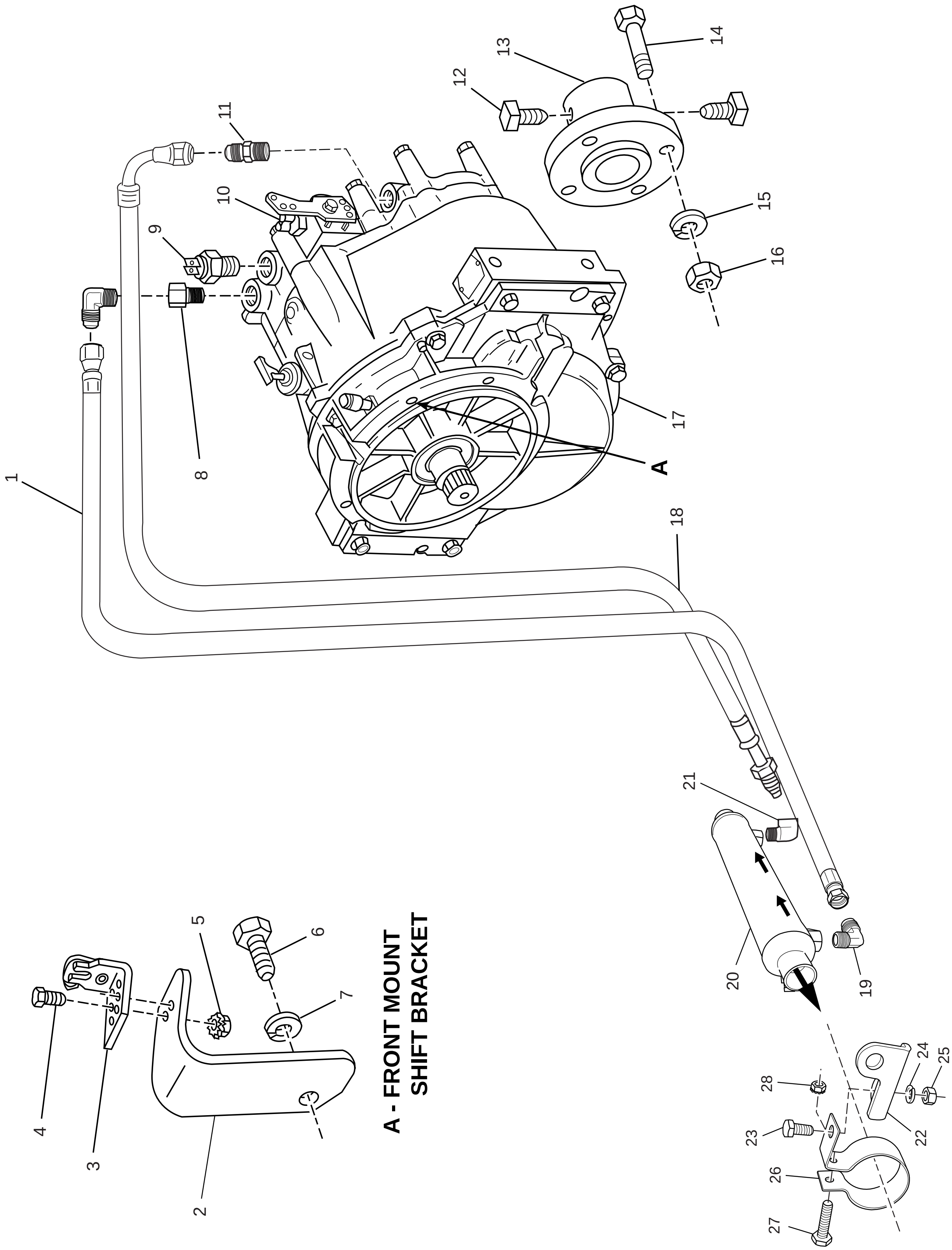
TRANSMISSION AND RELATED COMPONENTS (VELVET DRIVE “V”-DRIVE) - FIGURE 27



# TRANSMISSION AND RELATED COMPONENTS (VELVET DRIVE "V"-DRIVE) - FIGURE 27

| ITEM | PART NO. | QTY. | DESCRIPTION | QUANTITY |
|---|---|---|---|---|
| 1 | RS2055 | 2 | **Nut**, attaching bolt | |
| 2 | 96341 | 1 | **Shift Bracket** (front mount) | |
| 3 | R090086 | 1 | **Cable Clip**, single cable | |
| 3 | 22232 | OPT | **Cable Clip**, dual cable clip (not shown) | |
| 4 | RS5122 | 2 | **Bolt**, clip attaching (1/2") | |
| 6 | RA045007T | 1 | **Hose Assembly**, transmission to cooler (46") | |
| 6 | R024008 | 1 | **Elbow**, hose - transmission (90 degree) | |
| 7 | RS4674 | 1 | **Nipple**, pipe (3") | |
| 8 | R020037 | 1 | **Sender**, temperature alarm | |
| 9 | R153002 | 1 | **Switch Kit**, neutral start (not shown) | |
| N.I. | 25542 | 1 | **Switch & O-Ring Assembly** (not shown) | |
| 10 | R024010 | 1 | **Elbow**, hose - transmission (90 degree) | |
| 11 | RS1529 | 4 | **Nut**, coupling bolt | |
| 12 | RS2181 | 4 | **Lockwasher**, coupling bolt | |
| 13 | 22136 | 4 | **Bolt**, coupling (1 1/2") | |
| 14 | R148001 | OPT | **Coupler**, prop shaft (1" shaft) | |
| 14 | R148002 | OPT | **Coupler**, prop shaft (1 1/8" shaft) | |
| 14 | R148003 | OPT | **Coupler**, prop shaft (1 1/4" shaft) | |
| 14 | R148004 | OPT | **Coupler**, prop shaft (1 3/8" shaft) | |
| 14 | R148005 | OPT | **Coupler**, prop shaft (1 1/2" shaft) | |
| 14 | R148007 | OPT | **Coupler**, prop shaft (1 3/4" shaft) | |
| 14 | R148008 | OPT | **Coupler**, prop shaft (2" shaft) | |
| 15 | 2000090 | 2 | **Screw**, set - coupler | |
| 16 | RA156002B | 1 | **Transmission** (1.51:1 Reduction) | |
| 16 | RA156002D | 1 | **Transmission** (1.99:1 Reduction) | |
| 16 | RA156002E | 1 | **Transmission** (2.49:1 Reduction) | |
| 17 | RA045007P | 1 | **Hose Assembly**, transmission to cooler (60") | |
| 18 | R024010 | 2 | **Fitting,** 90 degree | |
| 19 | R147006 | 1 | **Cooler Assembly**, transmission oil | |
| 20 | R090013A | 1 | **Bracket**, oil cooler attaching | |
| 21 | RS0302 | 1 | **Bolt,** oil cooler attaching | |
| 22 | RS2180 | 1 | **Lockwasher**, oil cooler attaching | |
| 23 | RS2058 | 1 | **Nut,** oil cooler attaching | |
| 24 | R090010 | 1 | **Clamp**, oil cooler mounting | |
| 25 | RS0256 | 1 | **Bolt**, oil cooler clamp | |
| 26 | RS1028 | 1 | **Nut,** oil cooler clamp | |

## TRANSMISSION AND RELATED COMPONENTS (VELVET DRIVE 5000) - FIGURE 28

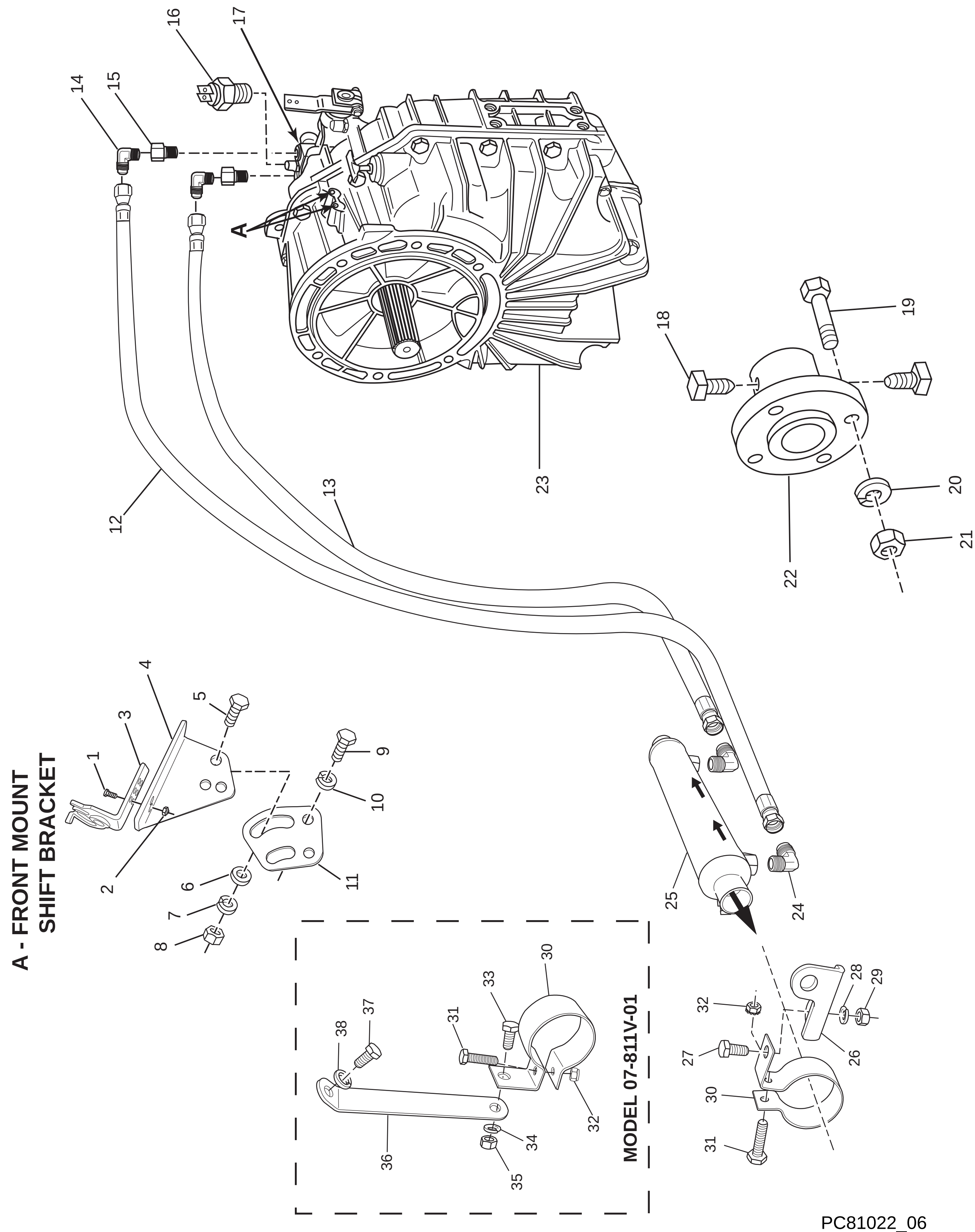



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## TRANSMISSION AND RELATED COMPONENTS (VELVET DRIVE 5000) - FIGURE 28

| ITEM | PART NO. | QTY. | DESCRIPTION | QUANTITY |
|---|---|---|---|---|
| 1 | RA045007T | 1 | **Hose Assembly**, transmission to cooler | |
| 2 | 98227 | 1 | **Shift Bracket**, (front entry) | |
| 3 | R090086 | 1 | **Cable Clip**, single cable | |
| 3 | 22232 | OPT | **Cable Clip**, dual cable clip (not shown) | |
| 4 | RS5122 | 2 | **Bolt**, clip attaching (1/2”) | |
| 5 | RS2055 | 2 | **Nut**, attaching bolt | |
| 6 | RS0329 | 2 | **Bolt**, shift bracket attaching | |
| 7 | RS2180 | 2 | **Washer**, shift bracket attaching bolt | |
| 8 | R024196 | 1 | **Fitting**, adapter | |
| 9 | R020037 | 1 | **Sender**, temperature alarm | |
| 10 | 25542 | 1 | **Switch & O-Ring Assembly** (not shown) | |
| 11 | 30603 | 1 | **Fitting**, adapter | |
| 12 | 2000090 | 2 | **Screw**, set - coupler | |
| 13 | R148001 | OPT | **Coupler**, prop shaft (1” shaft) | |
| 13 | R148002 | OPT | **Coupler**, prop shaft (1 1/8” shaft) | |
| 13 | R148003 | OPT | **Coupler**, prop shaft (1 1/4” shaft) | |
| 13 | R148004 | OPT | **Coupler**, prop shaft (1 3/8” shaft) | |
| 13 | R148005 | OPT | **Coupler**, prop shaft (1 1/2” shaft) | |
| 13 | R148007 | OPT | **Coupler**, prop shaft (1 3/4” shaft) | |
| 13 | R148008 | OPT | **Coupler**, prop shaft (2” shaft) | |
| 14 | 22136 | 4 | **Bolt**, coupling (1 1/2”) | |
| 15 | RS2181 | 4 | **Lockwasher**, coupling bolt | |
| 16 | RS1529 | 4 | **Nut**, coupling bolt | |
| 17 | RA157020B | 1 | **Transmission** (1.50:1 Reduction) Down Angle | |
| 17 | RA157020C | 1 | **Transmission** (2:1 Reduction) Down Angle | |
| 17 | RA157020D | 1 | **Transmission** (2.45:1 Reduction) Down Angle | |
| 17 | RA157020E | 1 | **Transmission** (2.80:1 Reduction) Down Angle | |
| 17 | RA156008 | 1 | **Transmission** (1.25:1 Reduction) V-Drive | |
| 17 | RA156008A | 1 | **Transmission** (1.50:1 Reduction) V-Drive | |
| 17 | RA156008B | 1 | **Transmission** (2:1 Reduction) V-Drive | |
| 17 | RA156008C | 1 | **Transmission** (2.50:1 Reduction) V-Drive | |
| 18 | 18203 | 1 | **Hose Assembly**, cooler to transmission | |
| 19 | R024010 | 2 | **Fitting,** 90 degree | |
| 20 | R147006 | 1 | **Cooler Assembly**, transmission oil | |
| 21 | 137425 | 1 | **Fitting**, 90 degree | |
| 22 | R090013A | 1 | **Bracket**, oil cooler attaching | |
| 23 | RS0302 | 1 | **Bolt,** oil cooler attaching | |
| 24 | RS2180 | 1 | **Lockwasher**, oil cooler attaching | |
| 25 | RS2058 | 1 | **Nut,** oil cooler attaching | |
| 26 | R090010 | 1 | **Clamp**, oil cooler mounting | |
| 27 | RS0256 | 1 | **Bolt**, oil cooler clamp | |
| 28 | RS1028 | 1 | **Nut,** oil cooler clamp | |

# TRANSMISSION AND RELATED COMPONENTS (HURTH GEAR) - FIGURE 29




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# TRANSMISSION AND RELATED COMPONENTS (HURTH GEAR) - FIGURE 29

| ITEM | PART NO. | QTY. | DESCRIPTION | | QUANTITY |
|---|---|---|---|---|---|
| 1 | RS5122 | 2 | **Bolt**, cable clip attaching | | |
| 2 | RS2055 | 2 | **Nut**, cable clip attaching bolt | | |
| 3 | R090086 | 1 | **Cable Clip**, single cable | | |
| 3 | 22232 | OPT | **Cable Clip**, dual cable clip (not shown) | | |
| 4 | R090202 | 1 | **Shift Bracket**, cable clip attaching | | |
| 5 | RS0282 | 2 | **Bolt**, shift bracket attaching | | |
| 6 | RS2674 | 2 | **Washer**, shift bracket attaching bolt | | |
| 7 | RS2179 | 2 | **Lockwasher**, attaching bolt | | |
| 8 | RS1027 | 2 | **Nut**, shift bracket attaching bolt | | |
| 9 | RS6531 | 2 | **Bolt**, shift bracket attaching | | |
| 10 | 93930000 | 2 | **Lockwasher**, shift bracket attaching bolt | | |
| 11 | R090235 | 1 | **Bracket**, shift | | |
| 12 | RA045007H | 1 | **Hose Assembly**, transmission to cooler | | |
| 13 | RA045007N | 1 | **Hose Assembly**, cooler to transmission | | |
| 14 | R024010 | 2 | **Fitting**, 90 degree | | |
| 15 | R024196 | 2 | **Fitting**, adapter | | |
| 16 | R020037 | 1 | **Sender**, temperature alarm | | |
| 17 | 25542 | 1 | **Switch & O-Ring Assembly** (not shown) | | |
| 18 | 2000090 | 2 | **Screw**, set - coupler | | |
| 19 | 90418138 | 4 | **Bolt**, coupling (1 3/8”) | | |
| 20 | RS2181 | 4 | **Lockwasher**, coupling bolt | | |
| 21 | RS1529 | 4 | **Nut**, coupling bolt | | |
| 22 | R148001 | OPT | **Coupler**, prop shaft (1” shaft) | | |
| 22 | R148002 | OPT | **Coupler**, prop shaft (1 1/8” shaft) | | |
| 22 | R148003 | OPT | **Coupler**, prop shaft (1 1/4” shaft) | | |
| 22 | R148004 | OPT | **Coupler**, prop shaft (1 3/8” shaft) | | |
| 22 | R148005 | OPT | **Coupler**, prop shaft (1 1/2” shaft) | | |
| 22 | R148007 | OPT | **Coupler**, prop shaft (1 3/4” shaft) | | |
| 22 | R148008 | OPT | **Coupler**, prop shaft (2” shaft) | | |
| 23 | RA157022 | 1 | **Transmission 630A** (1.22:1 Reduction) | 8° Down Angle | |
| 23 | RA157022A | 1 | **Transmission 630A** (1.55:1 Reduction) | 8° Down Angle | |
| 23 | RA157022B | 1 | **Transmission 630A** (2.00:1 Reduction) | 8° Down Angle | |
| 23 | RA157022C | 1 | **Transmission 630A** (2.50:1 Reduction) | 8° Down Angle | |
| 23 | RA157022D | 1 | **Transmission 630A** (2.70:1 Reduction) | 8° Down Angle | |
| 23 | RA157023F | 1 | **Transmission 800A** (2.85:1 Reduction) | 8° Down Angle | |
| 23 | RA156009 | 1 | **Transmission 630V** (1.29:1 Reduction) | V-Drive | |
| 23 | RA156009A | 1 | **Transmission 630V** (1.50:1 Reduction) | V-Drive | |
| 23 | RA156009B | 1 | **Transmission 630V** (2.00:1 Reduction) | V-Drive | |
| 23 | RA156009C | 1 | **Transmission 630V** (2.50:1 Reduction) | V-Drive | |
| 24 | R024010 | 2 | **Fitting,** 90 degree | | |
| 25 | R147006 | 1 | **Cooler Assembly**, transmission oil | | |
| 26 | R090013A | 1 | **Bracket**, oil cooler attaching | | |
| 27 | RS0302 | 1 | **Bolt,** oil cooler attaching | | |
| 28 | RS2180 | 1 | **Lockwasher**, oil cooler attaching | | |
| 29 | RS2058 | 1 | **Nut,** oil cooler attaching | | |
| 30 | R090010 | 1 | **Clamp**, oil cooler mounting | | |
| 31 | RS0256 | 1 | **Bolt**, oil cooler clamp | | |
| 32 | RS1028 | 1 | **Nut,** oil cooler clamp | | |
| 33 | 90318275 | 1 | **Bolt,** oil cooler clamp to bracket attaching | | 07-811V-01 |
| 34 | 9330000 | 1 | **Lockwasher**, oil cooler clamp to bracket attaching | | 07-811V-01 |
| 35 | 95310300 | 1 | **Nut,** oil cooler clamp to bracket attaching | | 07-811V-01 |
| 36 | R090233A | 1 | **Bracket**, oil cooler attaching | | 07-811V-01 |
| 37 | 98443025 | 1 | **Bolt,** bracket attaching | | 07-811V-01 |
| 38 | 93940000 | 1 | **Lockwasher**, bracket attaching | | 07-811V-01 |
| NI | RP077011 | AR | **Kit**, transmission oil filter (ZF) | | |

| ITEM | PART NUMBER | DESCRIPTION | QUANTITY |
|---|---|---|---|
| * | **RK173087-07** | **Kit, On-Board Parts 8.1L, FCC Fuel System** | |
| | 22433 | **Box**, On-Board | 1 |
| | R066024A | **Belt**, Serpentine | 1 |
| | R153017C | **Fuse**, 5 Amp | 2 |
| | R153017A | **Fuse**, 15 Amp | 2 |
| | R153017B | **Fuse**, 20 Amp | 2 |
| | R153019C | **Fuse**, 20 Amp, MAXI | 1 |
| | R153019F | **Fuse**, 40 Amp, MAXI | 1 |
| | R130015 | **Relay**, 12V, Fuel Pump, Ignition | 1 |
| | R130016 | **Relay**, 12V, Start | 1 |
| | RP030009 | **Spark Plug**, Set, (Platinum) | 1 |
| | RP061022 | **Impeller**, Raw Water Pump | 1 |
| | R080033 | **Primary Fuel Filter Element** | 1 |
| | RP080026 | **Filter and O-Ring**, Kit, FCC | 1 |

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